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Part I.—HISTORY, LITERATURE, &c.

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*On the Ruins at Dímápúr on the Dunsiri River, Ásám.*—By MAJOR H. H. GODWIN-AUSTEN, F. R. G. S., F. Z. S., &c., Deputy Superintendent, Topographical Survey of India.

(With two photocollotypes, three photozineographs, and one lithograph.)

The ruins at Dímápúr on the Dunsiri, 45 miles South of Golághát are exceedingly interesting. They have been known and visited by the comparatively few Europeans who have passed through this part of Ásám, but I do not think any notice has been taken of them, save by Major (now Colonel) J. Butler in his book 'Travels and Adventures in Assam', where two drawings are to be found of the entrance gateway and the ruins near, with a short account of the place (*vide* Appendix A). On our return at the end of April from field work in the Nágá Hills, we halted two days at Dímápúr, to make an examination of the place. Of the history of the city I was unable to obtain any information, and no native of the present place can tell one anything reliable. There seems, however, to be a general belief that the town was founded and built by a Kachhári Rájá, and destroyed by the Nágás from the south. Not having seen elsewhere buildings or sculpture bearing any resemblance to those at Dímápúr, I made a plan of the ruins, with the assistance of Mr. M. T. Ogle of the Topographical Survey Department, and he with Captain J. Butler, son of the above mentioned Col. Butler and Political Agent, Nágá Hills, made on the following day the circuit of the N. W. side facing the outer wall of the town. I have thus been able to give a very fair plan of the whole place. The unpleasantness of this work can be imagined: the dense underwood with the constant showers then



occurring was dripping wet, leeches swarmed, as well as several species of gadfly, and the air was close and smelled with decaying vegetation. The place is a favourite lair for tigers, who find the old, wet, grassy tanks pleasant spots in the heat of the day, and Captain Butler had not long previously lost a grass-cutter who was carried off, while grass was being loaded on the elephants. The plans, with drawings of the pillars, and more detailed examples of the style of sculpture will, I hope, prove of interest to the members of the Asiatic Society, and perhaps lead to a notice of other similar remains in the Ásám valley, with the history pertaining to them.

A general account here of Dímápúr will better convey an idea of the present position of the ruins, before I notice them in detail and shew how great a change has come over the place, since the days when we must imagine it a large and prosperous town, extending with its tanks over nearly two square miles of ground. The present position of Dímápúr is on the right bank of the Dunsirí, where we have a stockade and a few men of the Nágá Hills Police Force. There are a few houses round about it, and owing to the greater security our late occupancy has brought about, the place is gradually increasing in size. The soil in the vicinity is rich, and traces of former cultivation are still to be made out near the large tanks, but are now all overgrown with forest; it is this portion which the Mikirs and others of Dímápúr are now clearing and taking up again. With the exception of these small and recent clearances, all else, the ruins included, is covered with primeval forest larger and denser on the left bank perhaps than the right. The latter is higher than the former near the site of the stockade, and is about 25 feet high, of strong sandy clays. To the east of the stockade is the first tank, about 270 yards square, with a fine broad solid embankment about 25 yards at top, sloping gradually outwards, steeper slightly on the inner side. On the top of the embankment, Captain Butler has built a fine timber bungalow, overlooking the water, a very pretty site, with the distant Nágá hills shewing on a clear day above the great forest trees of the opposite side. A second tank is passed a short distance south on the road to Sámágúting, and is perhaps a little larger in extent; others, Captain Butler informed me, he had seen in the vicinity. Our time did not admit of looking them up, and it is tedious work forcing a way with elephants into the dense jungle, and takes a long time. The old town is situated on the left bank, the lowest. It was bounded on the north by a brick wall, 900 yards long; on the south, by the Dunsirí; the western wall was followed for 950 yards from the N. W. angle, but must be quite 1400 yards up to the river; the eastern wall is 700 yards long, with an obtuse salient angle; the fine solid brick gateway (still standing) is situated on this side, 150 yards from the N. E. angle. The sculpture and stone ruins are about the same distance on the left, after passing through the entrance arch. Numerous small tanks



occur within the walls, now for the most part silted up and overgrown with tall grasses. To explore the place thoroughly would take several days, and would no doubt bring to light other pillars and remains besides those we saw. Broken bricks were observed by me near tank No. 2 (*vide* plan), and it was said that the eastern wall is to be traced south of the river, but statements regarding this differed, and I do not think it does so. But it is a point worth clearing up by any one who may have the time and opportunity.

Dímápúr now stands in a country one might well call uninhabited. The nearest villages in the low country are Mohungdijua, 18 miles N. W., and Borpathar, 28 miles north; the Nágá village of Sámágúting on the first low range is 11 miles distant. To what it owed its former size and importance is difficult to say, excepting we suppose that relations with the hill people on the south were of a different nature in those days. It is quite possible that the hills were then in the occupation of the Kaehári race. If such were the case, Dímápúr would have been an important place, up to which the Dunsiri is navigable nearly all the year round, connecting it with the large walled town, the remains of which are to be seen at Numaligarh on the same river.

The entrance gateway is a fine solid mass of masonry, with a pointed arch; the stones which are pierced to receive the hinges of double heavy doors, are still in perfect preservation. It is flanked on both sides by octagonal turrets of solid brick work, and the intervening distance to the central archway is relieved by false windows of ornamental moulded brick work. It is curious that no advantage has been taken of the thickness of the walls to construct chambers in it. The building is still in good preservation, but has evidently been shaken on occasion by earthquakes. There is an appearance about the architecture as if Muhammadan artisans had been employed on its construction. All the ornamentation is simple scroll, not a single representation of any bird or beast. Neither is there anything in keeping with the sculptured stones of the ruin adjacent, some on either side of the archway, where the circular rose pattern occurs, of which I have given a drawing. The wall of the places adjacent to the gateway on either side appears to have been higher than the other portion, but its average height now is not more than 6 to 8 feet, having fallen everywhere, and in some places shews only as a bank, the bricks being buried in the vegetable mould of years. The bricks are of all sizes and of flat form, common to all the old brick work that I have met with in *Asám* and *Bhútan Duárs*. However, at Dímápúr, no brick is exactly of the same size. They appear to have been made by pressing the clay between boards to about  $1\frac{1}{2}$  inches in thickness, and then cutting it in squares, no two sides of which were truly parallel. The courses were very neatly laid, and the mortar was very white and good. Some of the bricks had been very



sharply cut into angles and edges for the cornice work. All the moulded bricks were of very fine clay and well burnt. The clay in the neighbourhood is of a superior kind.

Turning sharp to the left from the gateway, we followed the wall on the outside for about 200 yards, and then turning in through a gap in it, came at about 80 yards on the site of the ruins at their northern end. It is a peculiarly striking place, unlike anything I have seen in India, nor have I ever seen mention elsewhere of ruins like these. When perfect, it must have been an imposing looking place; even now buried as it lies, in the dense gloomy forest, it excites wonder and admiration for the labour expended in transporting such massive blocks of sandstone so far. The nearest point, at which the tertiary sandstone could have been quarried, would be upon the first line of hills, some 10 miles distant, while up the Dunsiri valley it would be much farther: and if they were brought from this side, it is not improbable that rafts might have been employed to bring the stone a part of the distance. It is not easy at first to make out the plan of the place owing to the underwood, but our Khási coolies soon cleared paths about the place and opened it up.

The carved pillars, the most distinguishing feature of the ruins, are arranged in two rows in front of what must have been a long sort of corridor. Whether this was enclosed in any way, or divided into compartments by mat-walls, is impossible to say, neither is it quite easy to understand the manner in which it was roofed, though in my drawing it is shewn how I imagine this was done. The highest pillars and highest portion of the covered part or corridor are in the centre and diminish on either side; the pillars at the southern end are certainly older, ruder, and of coarser make than those in the centre or north, and the distance between the two rows of pillars is narrower at the south end. The pillars are all of one general pattern, and remind one much of gigantic chessmen. What they are intended to represent is difficult to say; some would perhaps set them down as a form of lingas; but may not their origin be sought for in the very widely spread custom in this quarter of India of erecting rough stone monuments, and may not the custom have taken the form of these carved pillars, brought into their present position with such enormous expenditure of labour by a population, lowlanders, richer and more civilized than their mountain neighbours, but with whose customs and superstitions they assimilated. The tallest pillar is about 15 feet; the smallest at the south end, 8 feet 5 inches; a great number, 12 to 13 feet. The diameter of one of the largest was 6 feet. No two are precisely alike in the minor ornamentation, but all are of one general form, large semi-circular tops with concentric foliated carving below on the shaft. There is seen (*vide* Pl. V, bottom) what may possibly be intended for a spear head; if it be such, it is the only object represented. However



in the V-shaped supports of the corridor, animate objects (*vide* Pl. VI) are introduced, and the elephant, deer, dog, duck, peacock and polyplectron or pea pheasant can be made out; but, worthy of remark, not a single human form not even a head. The lotus is evident in all the carved work, and there is a general primitiveness of design which is very apparent. The simple circle within circle, more or less elaborated, is the distinguishing type of the sculptured work. The only instance of carving I know on the monoliths of the Khási Hills, is this simple circle with petaliform pattern. The old temple at Nimaligarh has such a circle carved on the huge slab that once roofed the single centre chamber, but in other respects there is no similarity of design. The scroll patterns of Nimaligarh shew an advanced style of Hindu art, are very intricate and laid out with mathematical exactness, and the figures are nearly all men and women, most obscene in their character, all cut in the hard granite of the Mikir Hills. I regret that my time was too limited, to make a plan of this temple, which when perfect must have been a very striking and well proportioned edifice. Even as it was, for the short look at the place, I am indebted to the courtesy of the acting manager of the tea plantation close by, who kindly lent an elephant, and went out to the ruin with me.

The V-shaped supports or pillars are unique, at least to me, and from measurements of the broken portions appear to have been longer armed on one side than the other, and those in the front row a little taller than those at the back. This was no doubt to carry the roof in a regular slope outwards and to the rear. A mortice has been cut on the top surface of each arm, and probably carried a connecting piece from one V to the other. This was probably of stone, from the size of the mortice. I could not find any block that corresponded with such. There is no doubt that stones have been removed. It is perhaps questionable whether this was a temple at all. I am inclined to think that it was the site of a great market place or "Nath," from its position first inside the gateway, and also from the general appearance of the place. The covered corridor would have very much the appearance of the long-roofed sheds, run up in many paths during the rains in this part of India (where bamboo and thatching grass are plentiful and close at hand), the roofs slightly sloping to the back. If the temple were Hindu or Buddhist, we should have had the form of some deity introduced somewhere in the sculpture. I think it, therefore, more likely that this was a town of an aboriginal race (old Kachhári?), who would have had a simple demon worship and no idol forms, as we find the case with races of this form of religion at the present day. The idea of a large bazar would very likely enter the minds of a large colony at Dímápúr; and the setting up of the stones would have been carried out at the time, as an act of propitiation or of handing down the memory of its foundation to posterity;



the same reason for which individuals of certain Nágá tribes erect stone monuments at the present day, not 20 miles distant. There was certainly no back or front side to the corridor in the strict sense of the term, for the V-pillars are carved on both faces and on the lower or outside face of the arms. To the west of this edifice, and parallel with it, runs a broad shallow ditch, dry in the cold weather, and on the edge of it, opposite the centre of the corridors, stands a large isolated pillar now much broken, skirting an old tank; and about 150 yards further, another isolated pillar is found, the largest in the place, being 16 feet 8 inches high and 23 feet in circumference. These great solid masses of sandstone (which is very soft when first quarried) must have been brought in and set up in the rough and then carved, or they would have been much damaged in getting them up. In this largest pillar such is evident; the original mass did not admit of its being cut with perfect curve, and here and there the concentric rings of carving follow into the natural and original indentations of surface. The gradual rise of land surface with probable sinking of the stones had hidden the sculptured portions for more than a foot of one examined. Some of the pillars have been brought down by falling trees, but I think an earthquake has had its share; for one of the corner V-supports has been twisted quite out of its original position (*vide* large plan) from west to east, 90 degrees, the weight of the arms of those on either side falling in contrary directions would have aided this. The sketches I have attached to this paper with the drawings of the pillars as they now appear will, I trust, give some idea of the style of architecture of these curious old ruins which are fast disappearing with the rapid growth and damp of the surrounding forest.

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*On the History of Pegu.*—By MAJOR GENERAL SIR ARTHUR P. PHAYRE,  
K. C. S. I., C. B.

(Continued from Journal, Part I, for 1873, p. 159.)

Mahá Upa Rádzá, the eldest son of the deceased emperor, burnt the body of his father, on the fifth day after his death, with the funeral ceremonies used for a Tsekya waté (Chakrawartti), or universal monarch. The bones were collected and cast into the river at its mouth. He then declared himself his father's successor, and appointed his own son Mengkyítswá, Upa Rádzá. He is in the Taláing history styled Nanda Bureng. The army which had been sent to Arakan was at once recalled. The king of Siam, Byanarít, came it is said to Hantháwati, and did homage, as did other tributary kings. But the king of Ava, uncle to the Emperor, did not appear, and his daughter, who was married to the Upa Rádzá, complained



to her father of being neglected and degraded. The king of Ava now entered into communication with his brothers the kings of Táungú and Prome, and also with the king of Zimmé, to sound them as to how far they would support him against the young emperor. They at once disclosed the intrigue. The emperor suspected that many of his nobles and officers had joined in a conspiracy against him, and thirty of them with their wives and children were burnt as traitors. The Emperor now determined to march to Ava, and was joined by the kings of Prome and Táungú with their armies. Advancing by the latter city, the emperor reached Pán-wa in May, 1584. The battle which followed, the Burmese history represents rather as a duel between the uncle and nephew, than as an action between two armies; while a contemporary European authority seems to intimate that after the personal encounter between the two leaders, a great slaughter of the Ava army occurred. The king and the emperor, each on his war-elephant, fought desperately, and had a select body of supporters who joined in the conflict. But the two chief antagonists appear to have singled each other out. The victory depended on the staunchest elephant, and though the emperor's fell exhausted, yet a fresh one being supplied, which he forthwith mounted, the victory was secured to him. The king of Ava fled, and escaping from the field, entered the Chinese territory, where he died soon after. The emperor carried away his uncle's family to Hantháwati, and appointed Máung Setyá, a son of the Emperor Tabeng-shwé-hti, to be governor of Ava. He died not long after, and Meng-ré-kyau-tswá, a younger son of the Emperor, was made tributary king.

During the contest near Ava, the conduct of Byanarit, king of Siam, was at first suspicious and then openly hostile. The Burmese and Taláing histories leave it doubtful what family Byanarit belonged to, but this is made clear by the history of Siam. That history, as related by Pallegoix and quoted by Sir John Bowring, agrees in the main with the history of Burma regarding the great struggle between the two countries during about fifty years in the sixteenth century; but differs considerably as to the dates of some events. The first and unsuccessful siege of the capital Yuthia (Yodayá) by Tabeng Shwé-hti, according to the Siamese history, took place in A. D. 1543. This event in the Burmese and Taláing histories is stated to have occurred in 1548-49. The next invasion of Siam was by Bureng Náung, and took place according to the Burmese history in A. D. 1563-64, but by the Siamese history in 1547-48. On this occasion the white elephants were taken, and the king of Siam was carried away, his son Brámahin being made tributary king. The Siamese history states that, in 1552, the king abdicated in favour of his son. This event probably answers to the statement in the Burmese history of the king while in captivity at Pegu, becoming a Rahán about the year A. D. 1568. He would thus neces-



sarily vacate the throne in the opinion of his own subjects. After this, he was allowed by the emperor of Pegu to go to his own country as a pilgrim. But there he threw off his monk's frock, and excited a rebellion which led to the second siege of Yodayá by Bureng Náung in 1569. During this, the king, that is he who had formerly abdicated and become a Rahán, and who is called Brátha-di by the Burmese, died. His son Brá-ma-hin, called Mahin tha-ra-thi-rát in the Siamese history, succeeded him, but was forced to surrender the city, in A. D. 1555, or fourteen years earlier than the date given for the same event in the Burmese history. This king was also carried off to Pegu, but the Siamese history states that he died on the way. The Burmese history is silent on this point, and it is not improbable that he was put to death. The emperor of Pegu then, according to the Burmese history, appointed one of the Zimmé royal family to be tributary king of Siam. In the history of Siam, he is called Phrá Thamma raxa thirat, and it is stated that he had formerly been king of Phitsilok. Though appointed to the kingdom by the emperor of Pegu, he was faithful to the interests of his own race; and his son Phra Naret, the Byanarít of the Burmese, at the age of sixteen distinguished himself by his hospitality to the Pegu troops on the frontier. This young prince by the death of his father became king of Siam about the year 1577, A. D., though the Siamese history places that event ten years earlier. Siam now become practically independent. Byanarít is called by the Portuguese the black Prince, and lived until the year 1605, A. D., as mentioned by the Hollander Floris, though the Siamese annals state that he died in 1593.

When Nanda Bureng was collecting his forces to advance to Ava in 1584, he summoned the king of Siam to attend with his army. Byanarít no doubt had designs to establish his own independence, but he appeared to obey the order and entered Pegu by the Tsit-táung route. The emperor was then in the upper country, but the Upa Rádzá, who was regent at the capital, directed the king of Siam to march on Ava. Instead of doing so, he came close to the city, and menaced an attack upon it. Hearing, however, that the emperor had defeated the king of Ava, he retired to Muttama, and carried off from thence a number of the inhabitants into Siam. The emperor at once sent a force against Siam under the Upa Rádzá. The expedition was hastily planned and badly executed. In marching down the banks of the Menám, the invading army was attacked by Byanarít, and forced to retreat with heavy loss. To retrieve this disaster, the emperor himself in the year 1587 led a large army which invested Yodayá. The Burmese history admits that the besiegers were unequal to the task. Thousands died from want and exposure, and the emperor was forced to make a disastrous retreat, returning to his capital in June 1587. The year following, the king of Prome having died, the emperor appointed one of his sons to that kingdom.



The emperor, anxious to preserve the empire unbroken, determined once more to invade Siam, in order to subdue that country. But the large armies which his father had assembled could no longer be raised. The expedition was entrusted to the Upa Rádzá, who marched in November 1590. Nearly the whole of this army was destroyed by incessant attacks from the Siamese. The Upa Rádzá was severely rebuked by his father on his return, and many of the superior officers were put to death. As some compensation for this disaster, the kings of Prome and Ava were successful in an expedition against Mogaung, where the Tsáubwá had rebelled.

The emperor once more sent an invading army against Siam under the Upa Rádzá. He succeeded in reaching near to Yodayá, but in a battle with Byanarít, in February 1593, the Upa Rádzá was killed, and but few of the invaders lived to return home. Meng-ré-kyáu-tswá, the king of Ava, was now appointed Upa Rádzá.

Pegu was now utterly exhausted. Discontent was universal, and the emperor, suspicious of every one, became wantonly cruel. The Buddhist monks of Taláing race excited his hatred. Numbers of them he forced to become laymen, and then either exiled or killed them. Thousands of the Mun people abandoned their country and fled, while those caught in their flight were put to death for the attempt. The country of the delta became depopulated, and an attempt was then made to drive down the people from the upper Eráwati, to till the fertile land of Pegu. But famine and plague raged, and there was no help.\* During this calamity, the king of Siam having come with an army to Martaban, the whole Taláing population joined him. He advanced to Hantháwati, but hearing that a force was moving down from Táungu, he retreated to Martaban, and thence to his own country. The king of Prome now rebelled against his father, and determined to take possession of Táungu, the native state of the family. He marched there, but as the Siamese had retreated from Pegu, the king of Táungu set out to return home and recover his capital. His brother of Prome then retired, carrying off all the cattle he could seize. At this time, the younger brother

\* The traveller Bernier, writing from Dihlí in 1663 to the minister Colbert, alludes to these dreadful events. Commenting on the internal disorder and the weakness of most Asiatic states, he observes: "To remove the danger of commotion, and put an end to all fears on that subject, nothing more appears necessary than the measure adopted by a Brahmin of Pegu, who actually caused the death of half that population by famine, converted the country into forests, and prevented for many years the tillage of the land. But all this did not suffice. Even the Brahmin's plan was unsuccessful; a division of the kingdom took place, and Ava the capital was very lately on the point of being captured by a handful of fugitives from China." The Brahmin of Pegu here mentioned is the "Brahma king of Pegu" of the Portuguese, the Burma king as we now write it. In 1662, a Chinese army did advance to Ava, to demand a fugitive Prince, whom the king of Ava delivered up, pretending to suspect him of hostile designs.



of the emperor, styled Ngyáung Ram Meng, governed the country of the upper Eráwati with his capital at Ava, and remained faithful to the empire. The emperor by his incapacity and his cruelty alienated all the other members of his family. Even his uncle, the king of Táungu, and his brother the king of Zimmé now followed the rest. The king of Táungu wrote to the king of Arakan, who had become powerful, to join him, and the same year 958, or A. D. 1596, according to the Burmese history, the son of the king of Arakan, styled Meng Khamáung, came with a large fleet, and took possession of Syriam. This town had gradually become the principal port of Pegu, and was the great depôt for foreign produce intended for the capital. The king of Táungu now sent an army against Pegu under his son Nát sheng náung; but it was not until 1598, that he and the Arakanese prince had concerted operations, and invested Hantháwati. Numbers of the leading nobles and citizens now left the city, and many of them fled to Ava. The emperor's son Meng-ré-kyáu-tswá entered the Táungu camp and was sent off to the city of that name, where the queen, at the instigation of her son, put him to death. The king of Táungu now entered the city and took possession of the palace; the emperor and all his family surrendered themselves prisoners. The city was plundered, and though the Arakanese force does not appear to have participated in the occupation, a portion of the plunder was reserved for them, and a white elephant and one of the emperor's daughters was sent to their camp. The city was taken in December, 1599, and thus ended the reign of the emperor Nanda Bureng, called also Ngá-tsú-dáragá. He and his empress were sent without delay to Táungu.

The king of Siam, Byanarít, hearing of these events, determined to march to Pegu to take his revenge for former invasions of his country. The king of Táungu did not desire to make Pegu the seat of his kingdom. The Talaings were inimical; the country was spoiled, and from the presence of Europeans he felt that he could do nothing without a fleet. He therefore returned to his own country, leaving everything to the prince of Arakan. But he carried off many of the inhabitants of the city, and immense treasures; the Burmese history adds also the holy tooth relic which had been acquired from Ceylon. This relic, it is stated, was some years later taken, when Táungu was captured by the son of Ngyáung Ram Meng, and carried to Ava, where it was enshrined in the Rádzá Mupi-tsúla Zedi. The king of Siam marched on to Táungu, and demanded that the emperor should be delivered up to him. This being refused, he invested the city, but provisions failing he was forced to retreat. Returning to Martaban, he made a Talaing chief tributary king of that portion of Pegu with the title of Binya Dala, and Bya-thabáik was made tributary king of Tavoy. He then returned to his own kingdom. The prince of Arakan carried off from Hantháwati what-



ever of value remained, and the city was utterly destroyed. Pegu proper seems now to have been ruled by various local chiefs and by the Portuguese adventurers at Syriam.

Nga-náung-dáu, son of the king of Táungu, urged his father to put the emperor to death, as a measure requisite for their own safety. The king replied that what he had done was for the public benefit, and not from hatred to his nephew. The prince then went to his mother, and though she was the sister of the emperor, by her order he was secretly murdered, early in the year 1600. Thus the empire of Pegu, which only forty years before, European travellers had described as the most powerful in Asia except China, was utterly broken up.

It will be interesting now to quote from European authors notices of the events we have summarized from the death of Bureng Náung in A. D. 1581. These events are related by the Portuguese historian Sousa; by Nicolas Pimenta, a Portuguese priest; by Gasparo Balbi, a Venetian merchant traveller; and by Peter Floris, a Hollander. Ralph Fitch, an Englishman, also came to Pegu in 1586 during the reign of Nanda Bureng. He gives a faithful account of the country and people, but says little of public events. He describes the king as keeping great state, and says, "When he goeth to war he goeth very strong. At my being there, he went to Odia in the country of Siam with 300,000 men, and 5000 elephants." This refers to the expedition of 1587, described in the Burmese history. Balbi, who was at Pegu in 1583, states that he had an audience with the king who received him kindly. This was before the evil days came, which totally changed his disposition. The traveller, however, saw the beginning of his troubles in his quarrel with his uncle the king of Ava. Suspecting that his own nobles were intriguing against him, he had them burnt as traitors with their wives and children, "an eminent and spacious scaffold" being built for the purpose. The Burmese history, diminishing as usual the cruel act of the king when any such is mentioned, says that only thirty persons were burnt; Balbi says "four thousand, great and small," which must be an exaggeration. Still the number must have been very large. "I also," he states, "went thither, and saw with great compassion and grief, that little children without any fault should suffer such martyrdom." "Ten days after that I saw the king upon an elephant, all over covered with gold and jewels, go to war with great courage. He encountered with the king of Ava, and they two fought body to body, without any hindrance from the armies." He states that the king of Ava was killed on the spot, which differs from the Burmese account, and that the emperor's elephant was killed. Nicolas Pimenta, whose narrative is translated in Purchas, came from Goa to Pegu in 1597, and remained in the country for a year or two. He relates the principal events in the reign of Nanda Bureng, "of the race



of the Bramas," and how that king, maddened by his misfortunes, commanded his son the king of Ava to bring "all into the kingdom of Pegu now so destitute of inhabitants; but the aire not agreeing, they brake out in pushes and diseases." The king of Siam then besieged Pegu. By the help of some Portugals and Turks the city escaped; but famine succeeded with a worse siege, insomuch that they killed and did eat each other."

For subsequent events, Pimenta refers to the letters of two Jesuit Fathers, Andrew Bones and Francis Fernandez, who relate the surrender of the emperor of Pegu to the king of Táungu, and the arrival in Pegu of a second expedition sent by the king of Arakan to secure some of the treasures still left in the city. "I went thither," says the Father, "with Philip Brito, and in fifteen days arrived at Syriam, the chief port in Pegu. It is a lamentable spectacle to see the ruins of temples and noble edifices; the ways and fields full of skulls and bones of wretched Peguans, killed and famished and cast into the river in such numbers, that the multitude of carkasses prohibiteth the way and passage of any ship.\* \* \* \* The king of Arakan is yet Lord of Pegu, though not acknowledged by those who fled and hid themselves, and hath delivered Syriam to Philip de Brito, that the Peguan fugitives might have refuge under Portugal protection."

The narrative of Faria y Souza relates the insane measures of Nanda Bureng after the death of his son, who, as we have seen, was killed in Siam in the year 1593, and which, as already shown, long after attracted the notice of Bernier. "The king of Pegu," he states, "in a rage for the death of his son, turned his fury against the people, and some days burnt above ten thousand, throwing so many into the river Ganga\* as stopped the passage even of boats. He forbid them sowing,† which caused such a famine, that they not only eat one another, to which purpose there was a public butchery of man's flesh, but devoured part of their own bodies. \* \* \* This was followed by a pestilence that depopulated the whole kingdom. The neighbouring princes taking this advantage, fell upon the king of Pegu, covetous of his treasures. Among them was the Black of Siam, who retired with the loss of 100,000 men. The king of Táungu was he that possessed himself of all; he promised life, liberty, and estates to all that would come over to him. The first that deserted were the Portugueses and Moors; for some Portugueses are like Moors in matter

\* An error as to the name of the Pegu river.

† This interference with agriculture, which is also mentioned by Bernier who appears to have read this account, is alluded to in the Burmese history in a somewhat obscure passage. The crown-prince Meng-ré-kyán-tswá, about A. D. 1593-94, it is stated, took possession of a large area of rice land, with the object apparently of cultivating it, doubtless by forced labour, under government direction, in order to lower the price of rice. It is admitted in the history that the effect was the very reverse.



“ of interest. After them followed a bastard son of the king, whose head  
 “ was cut off by order of the king of Pegu’s sister, wife to him of Taungu,  
 “ saying that he who was false to his father, could not be true to her. \* \*  
 “ \* \* The king of Pegu in despair delivered himself up to the king of  
 “ Taungu, who being possessed of the city and palace, found such treasure  
 “ that he made no account of silver and other metals and riches. It is  
 “ avouched for truth that he could not remove all the jewels and gold in  
 “ twelve caravans, each consisting of 700 elephants and horses. The news  
 “ of this treasure drew thither the king of Arakan, who contenting himself  
 “ with what he of Taungu undervalued, gathered above three millions, and a  
 “ great train of large cannon. The king of Taungu presented him of Pegu  
 “ to his sister, and she who having killed his son for betraying him, it was  
 “ thought would comfort him, used him reproachfully, and afterwards seeing  
 “ the king her husband inclined to mercy, caused him to be beaten to death.”

Pegu, but yesterday the seat of a great empire, was thus utterly over-  
 thrown. And, strange spectacle, though the king of Arakan had some  
 authority on the coast, no one seemed able or willing to become the master  
 of an extensive country, with a fertile soil and a healthy climate, command-  
 ing the outlet of a noble river, and capable of being made a great kingdom.  
 The fate of this land was for the moment decided by the presence of  
 European adventures, who swarmed in Pegu and Arakan. At this time, the  
 king of Arakan was Meng Rádzá gyi, called also Thado Dhammá Rádzá.  
 His predecessors, more than a century earlier, had been tributary, or at least  
 subordinate, to the kings of Bengal ; they had adopted the custom of issuing  
 a coinage, and generally inscribed thereon, in addition to their own titles, the  
 Muhammadan name which each king assumed. In the reign of Meng Pha-  
 láung, father of Meng Rádzá gyi, the kings of Bengal had become weakened,  
 and he held Chittagong and the country as far as the Megna river. The  
 Muhammadan name he adopted was Salím Sháh ; which the Portuguese  
 historian has written Xilimixa. He determined to occupy Pegu, but know-  
 ing that the Portuguese could command the sea, he was willing to hold it,  
 partly at least, through one of that nation. At this time there was a  
 Portuguese youth who appears to have been a ship boy, and became a menial  
 servant in the palace at Arakan. By faithful service he came to be  
 thoroughly trusted, and was honoured by his master with a title signifying  
 “ the faithful or honest one.” This is rendered in the Portuguese history  
 “ Xenga,” and indeed appears in the Burmese history, though in the some-  
 what contemptuous form of “ Nga Zenga.” His real name was Philip de  
 Brito and Nicote. He was sent by his master in the year 1600 to hold  
 Syriam for the king, but the Portuguese were to be allowed to live there  
 under their own laws. The king of Arakan reserved his own rights over  
 the country of Pegu generally. The Portuguese historian relates three events



in the following words : “ Xilimixa, king of Aracam, who had possessed himself of the crown of Pegu, to express his gratitude to the Portuguese that served him, gave them the port of Siriam, at the mouth of the river of the same name that runs within a league of Bagou, the court of the kings of Pegu. This grant was obtained of the king for the Portuguese by Philip de Brito and Nicote, who most ungratefully proved false to that Prince that had raised him from a vile collier to his favour and esteem. The manner was thus : Xilimixa, confiding in Nicote, was by him persuaded to erect a customhouse at the mouth of that river for the increase of his revenue ; and his design was to seize upon it and build a fort there, to give footing to the Portuguese for the conquest of that kingdom.” The king built a fort but appointed an officer of his own, styled Bannadala (Binya Dala), to command it, and Nicote determined to take possession of it. This he effected by means of a small body of Portuguese under John de Oliva, Paul del Rego, and Salvador Ribeyro. Nicote then went to Goa to gain the support of the Viceroy to his enterprise. The king of Arakan, afraid to send troops by sea where the Portuguese were masters, marched six thousand men across the mountains to a point on the Eráwati river, and from thence conveyed them by boat. They were under the command of Bannadala, and were joined by some troops sent by the king of Prome. They appeared before the fort near Siriam, where Ribeyro commanded. He at once boldly issued out and attacked them with a handful of men. Though this attack was successful, yet Bannadala soon received large reinforcements and surrounded the fort. The investment continued for eight months, and Ribeyro determined not to surrender, burnt three ships he had in the port. At length relief was sent by the Viceroy, Ayres de Saldanna, and the investing force withdrew. But when the Portuguese force, which appears to have been principally seamen, and was required elsewhere, sailed from Pegu, the enemy again gathered, and the siege was renewed. This time, however, from some superstitious dread, consequent on the appearance in the sky of “ fiery meteor,” the besieging army broke up and fled. Ribeyro now took such prudent measures, that the leading men among the Taláings, who only waited for a master, joined him with their followers, and offered to proclaim Nicote as king of Pegu. Ribeyro accepted the crown in his name. In the mean time, Nicote had received from the Viceroy the titles of Commander of Siriam, and General of the conquest of Pegu. He married the Viceroy’s niece, her mother being a Javanese, and returned to Pegu with six ships. He at once announced his reception of the kingdom in the name of his sovereign, and entered upon his duties as governor. He repaired the fort, built a church at Siriam, and marked out a new city, which, with prudent management might have become the capital of a great province under the crown of Portugal for many generations.



The king of Arakan wishing to temporize, sent to compliment him, and he returned a rich present to his former master. But this false courtesy on both sides was soon changed to open war. Joined with the king of Táungu, the king of Arakan sent a force under his son Meng Khamáung, with whom were two chiefs, called by the Portuguese Ximicolia and Marquetam. They advanced to the Portuguese town with a fleet of seven hundred small vessels. These were met and defeated by a small fleet under the command of Paul del Rego Pinnero. The Prince Meng Khamáung fled, but was followed by Nicote himself in some fast galleys and was taken prisoner. Nicote, to his credit be it said, treated the prince, to whom he had formerly been servant, with deep respect. "He watched him sleeping," says the Portuguese historian, "holding his buskins in his hands with arms across, a ceremony used by the meanest with their kings, in those parts, and himself attended him on all occasions." The king of Arakan entered into communication with Nicote for the release of his son, and appears to have come himself to Pegu for that purpose. From Goa the Governor received orders to surrender the prince without ransom. But with strange inconsistency, after his generous treatment of the young Prince, he demanded a ransom of fifty thousand crowns, on the ground that it was for the expense of the fleet he had fitted out. This led to further hostilities, which are thus related by the Portuguese historian. "The king of Arakan, justly offended thereat, set out a small fleet against him and which was easily defeated, but gave him occasion to enslave 100,000 Christians and treat them with great rigour; which nevertheless moved not many of them, though but new converts. Afterwards he combines with the king of Tangu, who besieges the town with a great army by land, while he shuts it up by sea, with 800 sail in which he had 10,000 men. Paul del Rego met him with 80 ships, and failing of the success he had formerly, setting fire to the powder, blew up himself and all that were with him, rather than fall into the hands of the enemy. The siege continued so long, till the besieged were ready to surrender, when on a sudden upon some suspicion, the king of Tangu quits the field by night, and he of Arracam found it to no purpose to be longer upon the sea." This was the state of affairs in the year A. D. 1603.

Nicote now seemed secure in his high position. The Taláing chiefs sought his friendship and protection, and the king of Táungu entered into a treaty, or at least a verbal arrangement, with him. His son Simon married a daughter of the king of Martaban, Binya Dala. But the native histories record with bitterness that all the pagodas round the city of Pegu were dug into, and plundered of their gold and silver images and other treasures. The Shwé Dagon, out of respect, it is to be hoped, to the national feeling, was spared. But the Taláing historian remarks that the foreigners wor-



shipped not this sacred building, nor the holy relics enshrined therein. The chief Buddhist monk, therefore, from the gifts of the people prepared a new *hti*, and placed it on the summit of the pagoda with such ceremonies, as in the absence of a native king, could be solemnized. But the people were deeply dissatisfied with the foreign rule, and murmuring said, should this continue long, our race and religion will come to an end. Indeed, the mention by the Portuguese historian of a hundred thousand converts to Christianity, without any explanation of the means by which their conversion was effected, suggests that Nicote in the midst of his worldly strife, vainly thought to strengthen his government, and perhaps to atone for his sins, by pressing Buddhists to become nominal Christians.

The history of Pegu now becomes so mingled with that of Burma, that the two can most conveniently be combined in one narrative. A power was rising in the country of the upper Eráwátí, which was destined to avenge the intrusion of foreigners and again to unite the two countries under one crown. Ngyáung Rám Phrá, brother to the Emperor Nánda Bureng, who, as we have seen, was in A. D. 1594 governor in the upper country, reduced it to order from the confusion into which it had fallen on the break up of the empire. The whole country north of Pugán submitted to him. The deposed emperor's son, Meng kyi nháung, who ruled at Prome with the title of Thado Dhammá Rádzá, saw danger to himself from this new power to the north of him. He therefore applied to his uncle, the king of Táungu, suggesting that they should combine against a power which when strong enough, would certainly attack them. This was agreed to, and the king of Prome assembled an army to march on Ava. He went on board his barge of state to move up the river, but was assassinated in the month of October, 1597, by one of his officers styled Rán-náing-tsa. The murderer then put to death all the members of the royal family whom he could lay hands on, and declared himself king of Prome. Some of the murdered king's family fled to Arakan, and one son, Meng-ré-uzaná, to Ava. The king of Táungu, who had set his army in motion to march on Ava, now recalled it, and held it in readiness for service against Hantháwati.

Ngyáung Rám Meng, being thus relieved from the threatened danger, rebuilt the palace, repaired the pagodas and completed the defences of his capital. He also assumed the title of Nú-ha-thú-ra Mahá Dhamma Rádzá. In 1599, he marched against the Shan states of Monyin and Mogáung, the Tsáu-bwás of which had refused to pay tribute. He was obliged to withdraw without effecting his object. The following year, he attacked Ramé-then, which had been occupied by the king of Táungu. This town he took without difficulty. In the year 1601, he was successful in an attack on the Shan state of Ngyoung-rwé. He next marched against Ba-máu, the chief



of which fearing to be taken, fled to the Chinese city of Mháing-tshi. The king followed to the border of the state of Máing-tim, and from thence sent on his son, the Ein-shé-meng, to demand the fugitive. The governor having referred for orders to the Emperor of China, was about to surrender the Tsáubwá, who attempted to escape. He was, therefore, arrested and put to death, or, according to another account, he swallowed poison. His body was then sent to the Ein-shé-meng, and his wife and children were delivered up.

Early in the following year, the king, in gratitude for his great success, commenced to build the foundations of the pagoda, called Káung-mhi-dáu. It was finished and dedicated in the year 1604.\* In 1603, Moné was subdued, and the adjoining states submitted. The king then occupied himself in settling the civil administration of the country and reorganizing his army. He next marched to Mogáung, defeated and captured the Tsáubwá, who was put to death, and his family carried off. The states of Momeit, Thi-báu, and Thein-ní were next subdued. On this last expedition, the king suddenly became ill, and seeing his end approaching, charged his son to recover the whole empire subdued by his father, Bureng Náung, and never to be separated from his brothers. He urged him, when he should take Prome, to spare Rán-náing-tsa, who though now ruling in his own name, had removed a formidable obstacle from their path. The king died in March 1605, and the body was brought to Ava, where it was burned with the funeral honours of a Tsekya-waté. His son succeeded him, and assumed the title of Mahá Dhammá Rádzá. He is also styled Anáuk Phet. He completed the pagoda commenced by his father, and placed the *hti* upon it. At the close of the rainy season of 1607, he marched against Prome. The king of Prome had sought support from Arakan, but the expected army had not arrived, and the city was invested. After eight months, it was taken by assault. In obedience to the injunction of his father, the king spared the usurper's life. He and his family were sent to Ava. Before long, however, he was sent to Mogáung, and so is heard of no more. The king's brother Meng-ké-thing-gá-thú was appointed governor of Prome, and the king himself now returned to his capital. There he received presents and friendly messages from the kings of Arakan, of Táungu, and of Zimmé, who felt that a powerful rival had arisen, who might become their master. But their offerings and greetings were treated with haughty disdain by one who now felt himself superior in power to each and all. He was indeed intent on fulfilling the dying charge of his father, and worked incessantly to prepare for the conflict. Early in 1610, he marched with a large army

\* Such is the statement in the Burmese history; but if the pagoda five miles distant from Ava on the right bank of the river be intended, there is a great discrepancy in this date and that which appears on an inscription within the enclosure of the pagoda.



against Táungu. The king of that state, who was the son of him who had taken Hantháwati twelve years before, at first behaved with courage, and came outside the city to fight the invader. But losing heart, he entered into negotiations, agreed to become tributary, and gave up some of his family as hostages. Mahá Dhammá Rádzá then returned to Ava, carrying with him, the Burmese history states, the holy tooth relic which his grandfather had received from Ceylon, and which the king of Táungu had taken from Pegu when he plundered that city in A. D. 1599. The king did not relax in his efforts to strengthen his army, and gathered round him men of influence from Prome and Táungu.

Philip de Nicote and Binya Dála, king of Martaban, knew that the king of Ava only bided his time to attack them. They appear to have entered into secret communication with the king of Táungu, and after making a league with him, then treacherously attacked him. They marched there, plundered the city and burnt the palace. The king they carried off as a prisoner. Nothing certain is known as to the causes of this attack, but it brought the king of Ava without delay against Syriam; and the Portuguese governor, though recklessly aggressive, appears to have been utterly unprepared to resist attack. In the month of October 1612, the Burmese army proceeded down the Eráwati in an immense fleet of boats, and, during December, Syriam was invested on all sides. By the following April, Nicote who was short both of provisions and powder, was forced to surrender. The city was given up to plunder, and the unfortunate Nicote was made prisoner. The Burmese history relates that, after five days, the king called for him and reproached him with his attack on Táungu. He excused himself by saying that he had been called by the king of that city. As Nicote belonged to that hateful description of heretics who destroy pagodas and holy images, he was impaled on a high stake before his own house, so that all might see him, and so died miserably. The king of Táungu was also put to death. All the foreigners of the same race as Nicote, between four and five hundred in number, were sent to the upper country. A few days after the city had been taken, five foreign ships, manned by Muhammadan sailors, arrived. Four of these were captured and one escaped. They were full of firearms which had been sent for the use of the garrison. Afterwards a ship belonging to Nicote's wife arrived from Achin, and was also captured. Binya Dála of Muttama now made his submission, and was allowed to remain there as tributary king, with the title of Binya Dhammá Rádzá. The king of Siam had advanced to Yé, in order to watch events. The king determined to drive him out, and sent his brother with an army. He attacked the Siamese, but was defeated and made prisoner.

As the capture of Syriam marks the downfall of the Portuguese power in Pegu, it will be convenient to quote here the account given by the



Portuguese historian of Nicote's proceedings: "Some of the neighbouring  
"princes, startled at this success of Nicote, sought his friendship and an  
"alliance with the king of Portugal. The first that effected it, was the  
"king of Táungu. Nicote marries his son, Simon, to a daughter of the king  
"of Martaban, thereby to strengthen himself, and have the opportunity of  
"gathering more riches. And being now desirous to rob the king of Táungu,  
"though actually then in peace with him, to colour his wicked design, he  
"pretends that the king was overcome by him of Ova, (as indeed he was  
"and made tributary) since the treaty, as if that could absolve him for breach  
"of faith. In fine, with the king of Martaban's assistance, he fell upon,  
"took, and robbed him of Táungu, and returned with him and above a  
"million of gold, without hearkening to the protestations he made of continu-  
"ing a faithful vassal to the crown of Portugal."

The final catastrophe is related as follows: "Our fortune in Pegu  
"now declined with the same swiftness it had rise, and it was just a wicked  
"increase should have a sudden detriment. The violence committed by  
"Philip de Brito Nicote on the king of Táungu provoked the anger of the  
"king of Ova, under whose protection he was. Scarce had he heard the  
"news, when casting on the ground his gown and veil,\* he vowed to the  
"idol Biay of Degu, he would not enter within his gates, till this quarrel  
"was revenged. He marched with 120,000 men, having put to sea† 400  
"vessels of considerable strength, in which were above 6,000 of those  
"Moors of noted valour, called de Caperuça, or 'that wear caps.' All that  
"was without the walls of Siriam he burnt, but met with vigorous opposition  
"at that place, notwithstanding Nicote was quite unprovided, having  
"suffered most of his men to go for India, and being scarce of powder as  
"who had fired the vast quantity of it found at Táungu. In this distress,  
"he sent a soldier to buy powder at Bengala, and he run away with the  
"money; and having sent for some to the town of St. Thomas, they sent  
"him none. Besides, those few Portuguesees that were with him, committed  
"such outrages, robberies, and murders, as seemed to hasten his ruin. For  
"want of powder there was no firing of cannon; they poured boiling pitch  
"and oil upon the enemy. His number of men might suffice, having 100  
"Portuguesees‡ and 3000 Pegues. Nicote sends out three ships against the

\* I am not aware of a custom among the Burmese of making a vow by throwing down garments. Nor do the Burmese men now wear what could be correctly described as "gown and veil." The "Biay of Degu," I suppose, stands for Phrá Dagon, now called "Shwé Dagon Phrá," the great pagoda at Rangoon.

† An error probably in translation for the river. The king of Ava came down the Eráwattí.

‡ The Burmese history states that between four and five hundred remained as prisoners when the place surrendered. This number included women and children. The "hundred Portuguesees" refer only, no doubt, to European fighting men.



"fleet; in one of them all the men were slain; the two retired with all  
 "theirs wounded. The enemy began to undermine the works, and the  
 "besieged laboured much, but to small purpose. After the siege had lasted  
 "34 days, Nicote sent to beg merey, but was not heard. He thought to  
 "prevail by the means of the king of Táungu, whom he had robbed of his  
 "crown, riches, and liberty; but the king of Ova understood and was  
 "resolved to punish him. The king of Arakan whom he had so grievously  
 "offended, sent 50 sail to his assistance, which were all taken by the  
 "besiegers. The king of Ova gives an assault, and they fought three days  
 "without intermission. The end of it was that 700 of the besieged were  
 "slain, one Banna whom Nicote had always honoured, having betrayed  
 "him. Nicote was taken, carried to the king and by him ordered to be  
 "impaled, and set up in an eminence above the port, that he might the  
 "better look at it, as the king said. He lived two days in that misery. His  
 "wife De Luisa de Saldanna was kept three days in the river to be cleansed;  
 "because the king designed her for himself; but being brought before, and  
 "exclaiming against him, he ordered her leg to be bored, and that she should  
 "be sent to Ova among the other slaves. Francis Mendez and a nephew  
 "of his were treated as Nicote. Banna demanding a reward, was soon torn  
 "to pieces, the king saying he could never be true to him, that betrayed  
 "the man who had so much honoured him. Sebastian Rodriguez was  
 "cooped up with a yoke about his neck. At first, the king designed not  
 "to spare any of the inhabitants of that place, but growing calm, he sent  
 "many as slaves to Ova. Then passing by Martavam, he obliged that king  
 "to kill his own daughter's husband, because he was Nicote's son, that  
 "none of the race might remain. This was the end of that man's avarice,  
 "who being naked a few years before, was raised to be worth three millions.  
 "He had one when he went to Goa; brought another from Táungu; and  
 "had got at least another since by prizes and trade. The enemy confessed  
 "they lost at that siege 30,000 men. But that it may appear that seldom  
 "any great calamity happens without the help of a woman, it is necessary  
 "to show how Nicote's wife was one of the principal causes of his ruin.  
 "She entertained one of his Captains as her gallant, and perceiving the  
 "Portugueses censured their familiarity, they persuaded Nicote he had no  
 "need of them, which was the reason they were dismissed, and that the cause  
 "of his ruin."

Thus the seat of power in the basin of the Eráwati was once more fixed  
 in the upper country, and with the capital at Ava; for the successor to the  
 empire of Bureng Náung and the ancient Burman monarchy deemed Pegu  
 to be too much exposed to the attacks of the western foreigners to be his  
 residence,



1874.]

Sir Arthur P. Phayre—*On the History of Pegu.*

21

*List of the Kings (or Emperors) of Pegu from the accession of the Tāung dynasty, called by Europeans the  
Brahma or Barma Kings.*

Names or titles of kings.	Commence- ment of reign.	Length of reign.	Relationship of each suc- ceeding king.	REMARKS.
	Year, A. D.	Years.		
1. Tabeng shwé hti, .....	1540	10		Conquered Pegu. Assumed the title of Emperor, having subordinate to him the kings of Ava, Prome, Tāungu, and Martaban.
2. Thamin-dwul, .....	1550	three months.		Styled by the Portuguese writers Ximi de Zatan.
3. Thamin-htáu, .....	1550	1		Styled Xenindoo by the Portuguese. He was a son of Binya Rán, No. 15 of the kings of Pegu, descendants of Wareru.
4. Bureng Náung, .....	1551	30		Styled Branginoco by the Portuguese. Was the general of the armies of Tabeng shwé hti, and claimed to be his lawful successor.
5. Nanda Bureng, or Ngá tsá dá-ra-ga, ...	1581	18	Son.	Deposed and put to death by the king of Tāungu.

p 207 12



nouns in ई have alternative forms in रया, clearly showing thereby that the termination of those nouns is a modification of रका; for the ending रया has resulted from रका by the elision of क्; रका first becoming रया in Prākṛit, afterwards in Gaurian (by the Gaurian law inserting a connecting consonant between hiatus-vowels) रया. E. g., beside खड़ी *chalk* there is खड़िया, beside मुट्ठी *handful* also मुट्ठिया (Pr. मुट्ठिया, Skr. मुष्टिका). Of these alternative forms the longer ones in रया are merely Prākṛit which have been transferred as such into the Gaurian, while those in ई are the same Prākṛit words, only having become *proper Gaurian* by becoming subject to Gaurian laws; e. g., take the Skr. खटिका *chalk*; in Prākṛit, it becomes खड़िया; next in passing into Gaurian, the Gaurian alternative law comes into play, of either inserting the connecting consonant य, or making *sandhi* of the hiatus-vowels. Hence in Gaurian, it becomes, either by inserting य, खड़िया, which is the *Prākṛitic* form of the word, or, making *sandhi*, it becomes subject to the disintegrating action of the further Gaurian law (explained in Essay III.) of reducing a final long vowel (in the present case या) to its inherent short vowel (i. e., here य), whereby it becomes a *proper Gaurian* word. Thus instead of खड़िया, we have now खड़िय, and now (by *sandhi*) the final इय becomes contracted to ई; just as Prākṛit पाणिचं *water* is contracted in Gaurian to पाणी or पानी; Pr. चोरिचं *theft* (Skr. चौर्य) Gaurian चोरी, etc. Thus we arrive at the present proper Gaurian form खड़ी. The truth of this theory (that the fem. termination ई is a contraction of इय) is born out by the fact, that in the old Hindi of Chand sometimes a final ई is found as a mere compendium scripturae for इय, as the metre shows; e. g., in the verses

नाग समुह धरती ।

ढाँचि देवल सुरंग मढ ॥

थान थान नर उडै ।

चंद तम उषम पादय ॥. Devagiri Prast.

The metre requires eleven instants in the first and third line and the last syllable to be *short*; it is evident, therefore, that उडै is merely as it were a stenographic or modernised writing for उडर (as, indeed, it is still occasionally written), and likewise धरती for धररिच (or धररिय). Chand must have chanted उडर and धररिच, forms almost Prākṛit, or halfway between the old Prākṛit and the modern Gaurian forms.

While Sanskrit feminine nouns in रका end in Gaurian always in र, on the other hand, Sanskrit feminines in या end in Gaurian sometimes in य, sometimes in ई. If we keep in view the fact, that in Prākṛit an amplified, but equivalent, or materially identical base is formed by the addition of the affix क, so that Skr. bases in य are represented in Prākṛit by the two equivalent base-forms in य and यक, and the Skr. fem. in या by the equivalent



fem. in *आ* and *इका*; it is evident that the Skr. fem. ending in *आ* becomes in Gaurian *अ* or *ई*, according as the Skr. fem. in *आ* assumes in Prākrit one of the two equivalent fem. forms in *आ* or *इका* (*इआ*). If the Skr. fem. in *आ* retained in Prākrit its form in *आ*, it assumed in Gaurian the fem. form in *अ*, but if it assumed in Prākrit the feminine form in *इआ* (*इका*), it changed in Gaurian to the \*form in *ई*; and if it had in Prākrit either form in *आ* or *इआ*, it shows also in Gaurian either form in *अ* or *ई*. Hence, e. g., the Skr. fem. *मेढ्रा ewe*, is in Gaurian both *मेड़* and *मेड़ी*; simply because in Prākrit the word *मेढ्रा* was current in both its equivalent forms *मेढ्रा* and *मेड़िआ*; on the other hand the Skr. fem. *बाना* may have been in Prākrit current generally only in the one form *बाना*, and hence appears in Gaurian only in the form *बान*, but never in the form *बानी* or *बनी*;<sup>\*</sup> and again all Skr. adjectives (as *सत्या true*) were in the (colloquial) Prākrit, generally at least, current in the amplified form in *इका* (as *सच्चिआ true*); and hence appear in Gaurian generally as ending in *इ* (as *सची*).

This theory is clearly proved by a few exceptional forms occurring in High-Hindī. Exceptions, it may be remarked, as a general rule, are like archaic and poetical forms, invaluable for the determination of the origin of grammatical forms, the derivation of which has become obscured. There is a small number of Hindī masculine nouns in *आ*, which form their feminines not, according to the rule, in *ई*, but irregularly in *इया*; e. g. *बूढ़ा old man* (Skr. *वृद्धः*, Pr. *वृद्धओ*) forms its feminine *बुढ़िया*, not *बूढ़ी old woman*; *कुत्ता dog* has fem. *कुत्तिया*; *पुड़ा parcel*, fem. *पुड़िया*; *चंगा coat*, fem. *चंगिया*; *गड़िया doll*, etc.† Now *बुड़िया*, *कुत्तिया*, etc., clearly stand for the Prākrit *वृद्धिआ* (Skr. *वृद्धिका*), *कुत्तिया*, etc. The masculine corresponding to *वृद्धिआ* would be *वृद्धओ*, which is represented on the one hand in Skr. by *वृद्धः*, on the other hand in Gaurian by *बूढ़ा*. But it is evident that the origin of the regular feminine in *ई* cannot be different in kind from that of irregular feminines in *इया*. Their difference simply consists in the degree to which phonetic corruption has gone in either, and the anomaly of those Hindī nouns which have a feminine in *इया*, is merely this, that while in the masculine they have assumed the *proper Gaurian* form in *आ* (or *ओ*, i. e. *अको*), in the feminine they retain the full *Prākrit* form in *इया* (i. e. *इका*), instead of assuming like the others, also in the feminine the *proper Gaurian* form in *ई*. It follows, therefore, that the feminine ending in *इ* is a curtailment of the original Prākrit ending *इआ* (*इया*) or *इका*; and that all Gaurian

\* The reason, probably, was to keep it distinct from the word *बानी* or *बनी light, candle*.

† The Bangālī has *बूढ़ी old woman*; and the low Hindī (Ganwāri) has also *बूढ़ी*, besides *बुढ़िया*. In the Ganwāri every fem. in *ई* may have an alternative from in *इया*, to express contempt or emphasis and determinateness; see note on p. 94.—The Marāṭhi has *कुत्ती* not *कुत्तिया*.



feminines in ई, like their corresponding masculines in ओ, or आ, are derived from a *particular* Prākṛit base in इका, corresponding to the masculine अको and neuter अकं, formed by means of the affix क.

I have already briefly adverted to the phonetic process, by which the Prākṛit termination इआ (or इका) has become modified or corrupted into the Gaurian termination ई. Though the Gaurian is by no means adverse to the hiatus, when originated within its own sphere; it is, *as a rule*, intolerant towards those cases of hiatus which originated in the Prākṛit. There is a most obvious and natural reason for this tendency, without it the language would have destroyed itself. After the Prākṛit had thrown out the consonants, the vowels by themselves could not have long retained existence. The only way of preserving the word from complete annihilation was, either to insert consonants for the vowels to lean upon and to be protected by, or to contract them (by sandhi) into consonants or diphthongs (resp. vowels); e. g., the Sanskrit आगतः (*arrived*) becomes in Prākṛit आअओ; the form आअआ contracts in Gaurian to आओ, and this again might have been contracted into ओ, and thus altogether frittered away, if this process of corruption were not arrested by the Gaurian through the insertion of the connecting-consonant य, by which the form आओ is changed to आयो (in High-Hindī आया). Similarly, the Sanskrit उपविष्टः (*sitting*) becomes in Prākṛit उअइड्डो; and to save this almost entire conglomeration of vowels from destruction, the Gaurian makes *sandhi* of the hiatus-vowels, and changes the form उअइड्डो into बैडो (or बैडा High-Hindī). This Gaurian tendency comes into operation on the Prākṛit feminine termination इआ. Sometimes the Gaurian inserts the connecting-vowel य (thus इया); in that case, the semivowel protects the two vowels इ and आ, especially the final आ, which would otherwise be reduced to अ (by the other Gaurian law of shortening finals). In this way originated those Gaurian feminines which end in इया; and their manner of origination explains why in their case the *Prākṛitic* form of the word has been preserved (instead of the *proper Gaurian* form). Generally, however, the Gaurian has recourse to the other method, of making *sandhi*. First, the final Prākṛit आ is reduced to अ, according to the Gaurian law; next, the preceding इ is contracted with the following अ to ई by sandhi. Accordingly, the Prākṛit termination इआ changes to इअ or (with insertion of euphonic य) इय, and then to ई. E. g., Skr. खटिका *chalk* becomes in Prākṛit खडिआ, and in Gaurian either खडिया or (first खडिय, finally) खड़ी; or again, Sanskrit कृता *done* becomes in Prākṛit कृआ; in Gaurian first कृय (किय), finally की. That this is really the way in which the Gaurian feminine in ई originated, is proved by the fact, that the intermediate form in इय (for इअ) is still very commonly found in the oldest Hindī poetry of Chand, as the following verses may serve to show;

पम्पारी दिव पुत्र पर ।



तिहि पुत्री वर डार ॥ *i. e.*

H. H. पामरी दिई (उम ने) पुत्र को । etc.

Sasivrithá kathá XXV, 2 ;

Or नीलवरन वसुमतिय

पहिर आष्टन अलंकिय *i. e.*

H. H. नील रंग की है वसुमती ।

मानो भूषण पहनके सवारी ऊई ॥ XXV, 35.

Or कथा जेपि समिष्टन किय ।

अब कहत कथा विस्तार किय ॥ *i. e.*

H. H. कथा बोलकर समिष्टना की ।

अब कहता है कथा विस्तार की ॥ *ibid.* XXV, 41.

These verses contain examples of the feminine form in **इय** (इय) ; viz. **दिय** (Skr. दत्ता) वसुमतिय Skr. वसुमतिका (Pr. वसुमतिआ), अलंकिय (Skr. अलङ्कृता, Pr. अलङ्किया) ; किय (Skr. कृता, Pr. किदा or क्रिया).<sup>\*</sup> The sandhi change of **इय** to **ई** may be considered to have taken place in this way, that as the final Prákrit **आ** was shortened to **अ** and finally dropped, the preceding **इ** was lengthened to **ई** by way of compensation. This view has in its favour the analogy of other similar cases in Gaurian, where the shortening of the final long vowel is compensated by lengthening a short penultimate vowel. There is, e. g., the case of the Maráthi feminine bases, formed by the Gaurian affix **ईण**, as **इलीण** fem. of **इली** *elephant*. In Sanskrit the fem. would be **इलिनी** (of **इली**), in Prákrit **इल्यिणी** (of **इली**). According to the Gaurian law, the final long **ई** of the Prákrit **इल्यिणी** is reduced to **इ** ; thus making **इल्यिणि** ; and according to the other Gaurian law this resulted final **इ** becomes *quiescent*, and is not written ; thus making **इल्यिण** (just as **आग** *fire* is written for **आगि**, **कर** *having done* for **करि**, etc.) ; finally by way of compensating these losses, the penultimate short **इ** is lengthened to

<sup>\*</sup> To the word **किय** I beg to call special attention. I think it tends to prove my theory of the origin of the Hindi Genitive post position **की** (का, के) from the participle **कृत**. See Essay II, pp. 138, 139, where I thought it very probable that such forms would yet be discovered in the oldest Gaurian Hindi of Chand.—The Hindi Genitive position **की**, though identical in sound, is differently spelled from the feminine **किई** of the past part **किया** ; yet both represent the Skr. feminine **कृता**. The reason of the difference is this, the Skr. form **कृता** may assume in Prákrit two forms, with or without the affix **क** ; *i. e.* it may be either **क्रिया** (**कृता**) or **किइया** (= **कृतिका**). By an identical phonetic process the form **क्रिया** turns in Gaurian into **की**, and **किइया** into **किई**. Now a little comparison of Gaurian past participles with Skr. and Prákrit ones will show, that, *as a rule*, Prákrit past participles, when they passed into Gaurian in their proper sense of a past part., passed into it in the *amplified* (*particular* Prákrit) form made by the affix **क**. Conformably to this rule, it was the Prákrit from **किइया**, which gave to Gaurian the past participle **किई**, while the alternative Prákrit form **क्रिया** sank down in Gaurian to be the post-position or affix **की**.



ई; thus we obtain the form वृत्तीण or (according to Maráthi orthography) वृत्तीण. That this is the true account of its origin is proved by its *oblique form* वृत्तिणी (e. g. Gen. वृत्तिणी चा), where the form of its Prákrit original re-appears, namely, the originally short इ in the penultimate, and the original vowel ई in the final syllable.\* This final ई of the oblique form proves that the inflexional base of the *direct form* originally ended in इ. The case is exactly the same as that of the feminine nouns in अ (like चाग, etc.), which have an *oblique form* in ई; and which has been fully discussed in the 3d Essay, p. 159. The oblique form वृत्तिणी, namely, is identical with the Prákrit genitive वृत्तिणीस्सु or वृत्तिणीस. It follows from this derivation of the feminine affix ईण that it can properly be added only to such nouns in ई as are derived by means of the Sanskrit affix इन्. But it is, irregularly, added also to such nouns in इ, as are derived (as will be proved further on) from a base formed by the affix इक; e. g., मालीण, fem. of माली gardener, and also to nouns in क (as परमोण fem. of परम्) and अ (as बाघीण from बाघ tiger). That this is the true derivation of the feminine affix ईण is confirmed by the Bangáli, which has, e. g., वृत्तिनी as against the Maráthi वृत्तीण, बाघिणी, as against the Maráthi बाघीण; मालिनी, against the Maráthi मालीण. I suspect, however, that the irregularity, just noted, is only apparent; and that we have here two altogether different affixes which though identical in outward form, are widely different in origin. The affix ईण, namely, as added to nouns of a Sanskrit base in इन् (as वृत्ती), contains the Skr. fem. affix ई, which by the action of the laws of phonetic decay has been altogether lost, while the remainder इण is really part of the original base and not any affix at all. On the other hand, the affix ईण, as added to the other nouns, contains probably the Sanskrit feminine affix, चानी (as इन्द्राणी feminine, i. e. wife, of Indra), of which the final ई has also been lost, while the remaining vowel ई (i. e. ईण minus ण) is a modification of the original vowel आ; e. g. the feminine of बाघ was probably originally बाघाणी, in which form the vowel आ, perhaps under the influence of the final long ई was changed to इ (compare इका the feminine corresponding to the masculine affix इक); hence the Bangáli बाघिणी; again the final इ, as usual, was reduced, and on the other hand, the penultimate इ lengthened to ई, thus arose the Maráthi बाघीण. Some confirmation of this theory may be found in the fact, that while such Bangáli nouns as कामार *blacksmith* form a fem. कामारनी (the Sanskrit equivalent of which would be कर्मकाराणी *wife of a black smith*), corresponding Maráthi words as लोहार *blacksmith*, form a feminine लोहरीण.†

The Gaurian fem. ending ई, as we have now seen, is a modification of the Prákrit fem. ending इया (Sanskrit इका). This fem. termination इया

\* The penultimate इ reappears because the reason for its lengthening no more exists.

† It may be noted that if in these feminines, in which the penultimate has been lengthened in Maráthi, the antepenultimate is a long vowel, it is generally shortened;



corresponds to a masculine termination अथा in Prākrit, अकः in Sanskrit, and to a neuter termination अथं in Prākrit, अकम् in Sanskrit. That is, the base-termination अक is weakened in the feminine to इक. It has been already stated in Essay IV, that the base अक may be modified not only to इक, but also to उक. A few instances of the latter modification occur already in Prākrit, as regards the masculine and neuter;\* but as regards the feminine, it is both in Sanskrit and the literary Prākrit almost an exclusive rule to admit only the modification into इक. But in Gaurian, the modification into उक is not uncommon, and we may conclude from this fact that it was probably a modification peculiar to the vulgar or colloquial Prākrit (as opposed to the more artificial scenic Prākrit). For we must refer all Gaurian feminine nouns in क to this base in उक. Their termination क is the *proper Gaurian* modification of the Prākrit उथा or Skr. उका, exactly as Gaurian termination ई is the modification or corruption of the Prākrit termination इथा, Skr. इका. For the Prākrit termination उथा may become in Gaurian either, by inserting the connecting vowel व, उवा; or, by making *sandhi*, it may become in the first instance उथ, and finally क, the present form. Feminine nouns, terminating with the first of the two forms उवा, are, as we shall see later on, very common in Ganwāri Hindī, e. g. जोड़वा *wife* besides जोड़; etc. The second of the two forms क occurs, as the termination of many feminine nouns, in Low and High Hindī, and in all other Gaurian languages; e. g., *sand* is in Gaurian बालू, in Sanskrit it is बालुका, in Prākrit बालुथा; the Gaurian reduces the final था of the latter to थ, and then contracts (by *sandhi*)† the preceding उ with the final थ to क; thus giving us बालू the present Gaurian form. The process is in every respect like that by which the feminine termination ई is formed by the Gaurian (see above, p. 26). Again *leech* जलू; in Sanskrit it is जलोका; in Prākrit जलुथा, which changes in Gaurian through the intermediate form जलुथ to जलू. Again *bear* भालू, in Hindī masc.; but in Marāṭhī also feminine (see Manual, p. 36. e.); in Sanskrit it is भज्ज or, with addition of the affix क, भज्जक or भज्जक, and in the low form भज्जुक or भज्जुक; all these forms occur; the fem. of them would be भज्जिका or भज्जिका; the latter would be in Prākrit भज्जुथा, in the intermediate form

e. g. ठाकुरीण feminine of ठाकूर not ठाकूरीण; परिटीण feminine of परीट; अतिनीण feminine of अतीत; गरुडीण feminine of गरुड़ राजपुत्रीण feminine of राजपूत, etc. See Dadoba Pandurang's Mar. Grammar, pp. 36, 37. The reason, no doubt, is that the antepenultimate is not an originally long vowel, but only a Gaurian formation.

\* See note 5, p. 105, in the 2nd Essay; Journal Asiatic Society, Bengal, Vol. XLII, Part I, 1873.

† The *sandhi* of उ + थ to क may also be explained, like that of र + थ to र, by the lengthening of उ to ऊ as a compensation for the shortening and quiescence of final थ.



भण्ड; and thus becomes in Maráthí भालू. Again, *palate* is तालू or टालू, masc. in Hindi, but fem. in Maráthí. In Sanskrit it is तालु which is neuter; but there is a bye-form made by the affix क and this is also feminine, viz. तालुका; in Prákrit it becomes तालुञ्चा, and in Gaurian, through the intermediate form तालुञ्च it becomes तालू or टालू. Again *chalk* is Sanskrit खटिका, in Prákrit it is खडिञ्चा, but also खडुञ्चा; for both forms occur as the bases of Gaurian formation. While the Hindi takes the form खडिञ्चा, and from it derives its form खड़ी, the Maráthí takes the form खडुञ्चा and from it derives the form खडू.

From what has been said regarding the origin of the feminine nouns in ई and ऊ, it follows that these terminations are *purely Gaurian* formations. With this agrees the fact that all feminine nouns in ई and ऊ belong to the *proper Gaurian* element in all Gaurian languages, in other words, do not admit of an oblique form. Only the Maráthí presents a very few exceptional cases of feminine nouns in ऊ, which have an *oblique form* in वे. They are the following thirteen nouns, (see *Manual*, p. 36), आक *woman*, ऊक *louse*, जलू, *leech*, जाऊ *sister-in-law*, टालू *palate*, तालू *forehead*, दाहू *spirits*, पिहू *flea*, पेहू *coil of rope*, भालू *bear*, बालू *sand*, सासू *mother-in-law*, सू *needle*. The probable origin of the final ए of the *oblique form* of feminine nouns, I have already explained in Essay IV. Assuming that explanation to be correct, the *oblique form* in वे of those exceptional feminine nouns in ऊ easily explains itself from the Prákrit. E. g., to बालू *sand* corresponds in Sanskrit बालुका, in Prákrit बालुञ्चा. Gen. of बालुका is बालुकायाः, in Prákrit बालुञ्चार. The latter form would change successively to बालुञ्चर, next to बालुए, finally to बाल्वे, which is the present form. Again, जलू *leech* is in Skr. जलौका, Prákrit जलूञ्चा; the Gen. is Skr. जलौकायाः, in Prákrit जलूञ्चारे, and this would change successively to जलूञ्चर, next to जलूए, and finally to जल्वे which is the present Maráthí *oblique form* of the word.

On the other hand, as regards feminine nouns in दया and उवा, this termination has much more the character of a Prákrit formation; still in the Hindi-class Gaurian languages which, as has been shown in Essay III, possesses only a very small number of *Prákritic* nouns, (viz., the masculine nouns in आ), all the feminine nouns in दया or उवा belong to the *proper Gaurian* element, and do not admit of an *oblique form*. As they have retained their *direct form* their Prákritic character almost entirely, (the Gaurian having added merely the euphonic connecting consonants य, व), there can be no doubt that they would have an *oblique form* in ए in Maráthí. In Hindi, as I have just remarked, they are very common. In the Ganwárí (or Low Hindi) especially, they may be heard as bye-forms of any feminine nouns in ई or ऊ, and there they are very frequently used; they are always employed when the thing expressed by the noun, is referred to as something *known* and *determined* (their use being analogous to that of the



articled noun); they are also employed to express contempt, or affection, or diminution.\*

For this latter purpose only (with a very few exceptions enumerated above, as कुत्तिया *bitch*, बुद्धिया *old woman*, etc.), they are used in High-Hindī, where, therefore, their employment is very rare. E. g., जो बा, the bye-form of जोरु *wife*, is used in the Gaṇwāri in the place of जोरु, but otherwise, if used at all it expresses a *contemptible* wife? So in High Hindī, लठ्ठी means a *large stick*, a *pole*; but लठ्ठिया a *small stick*, and so forth. In erotic poetry, as may be expected, these feminine forms are very common; e. g., in the following verse of Akhtar,

मान फेर लिया करके रतियाँ ॥  
 अब काहे न लगावन रे रतियाँ ॥  
 गई तेरे फिराक में नौं द आँदियाँ  
 कछो कैसे कटे तुम बिन रतियाँ

Here रतियाँ, रतियाँ रतियाँ, are the diminutives (in the plural) respectively of the feminine nouns बात *word* (Prākṛit वत्ता or वत्तिआ), छाती *breast* (Prākṛit वत्ता or वत्तिआ); रात *night* (Prākṛit रत्ती or रत्तिआ).

I proceed to the examination of the inflexional base of the masculine nouns. The *direct form* of the inflexional base of masculine nouns in अ, like that of the feminine and neuter nouns, may end in a twofold wise; viz. either in अ, as दूध *milk*, घाम *heat*, etc., or in आ, as कियो *done*, घोड़ा, *horse*, etc. In High Hindī, Marāṭhī, Panjābī, and Bangālī, the termination आ

\* Of these three meanings that of *diminution* is no doubt the original one, as it easily explains the other two. For general experience shows that in all languages, nouns are used in preference, in their diminutive form, to express affection or contempt. Moreover, it may be observed that in the speech of the uneducated, the diminutives are frequently used *without any particular meaning attached to the diminutive form of the word*. If with this fact be put together the further fact, that in Sanskrit diminutives (expressive of affection) are formed by means of the affix क, and that Prākṛit, the source of the modern vernaculars, is the speech of the uneducated, the frequent, apparently meaningless, use of words formed with the affix क in Prākṛit, and the extensive use of nouns in आ or आ, (आ) in Gauṛian finds a natural solution, at the same time that the theory of the derivation of the Gauṛian nominal termination आ from the Prākṛit termination अआ and the Skr. termination अक receives a strong confirmation. As examples of the affix क being used in Skr. to form diminutives of endearment, I may quote the following from the Uttara Rāma Charitra,

देव त्वर्यतां । सभावयतु देवाः पुत्रकं देवः, i. e.  
 king haste thee, deliver the queen's pet.  
 or देव मोदस्व विजयिना देवाः पुत्रकेण, i. e.  
 king rejoice over the victory of the queen's pet.

Here पुत्रक is used with reference to an elephant, and alternates with the other word of endearment वत्स which is also applied to the elephant occasionally. See Uttara Rāma Charitra Act III, pp. 96, 97. See also Bopp, Krit. Gramm der Skr. Sprache, p. 327 (under अक and क), 2nd Ed. In the 4th ed., the reference to diminutives has apparently been withdrawn.



appears slightly modified as *आ*. In the Braj Bhāshā it is *ऐ*, which is not a mere modification of *आ*, but as I think (see below p. 37) rather a co-ordinate formation to *ऐ*. I have already noticed in Essay IV. that Sanskrit masculine nouns with a base in *अक* appear in Gauṛian invariably with the termination *ऐ* (or *आ*), as Skr. घोटकः, Pr. घोड़यो, Gauṛian घोड़ा or घोड़ा or घोड़ा, etc., while Sanskrit nouns with a base merely in *अ*, appear in Gauṛian now as terminating in *अ*, now in *ऐ* (*आ* or *ऐ*). And remembering that in Prākṛit any base in *अ* may, without change of meaning, add the affix *क*, and thus end in *अक*, we may conclude, that if a Sanskrit masculine noun with a base in *अ* ends in Gauṛian in *ऐ*, it must have previously assumed in Prākṛit the base-form ending in *अक*; while if it ends in Gauṛian in *अ*, it must have previously remained unchanged in Prākṛit; e. g., Skr. युगल *pair* with a base युगल (i. e. in *अ*) may assume in Prākṛit the simultaneous forms जुगलो or जुगलयो (lit. युगलकः i. e. with affix *क*); the former becomes in Gauṛian जोड़, the latter जोड़ा (or जोड़ा). Again, Sanskrit बीज *seed* may be in Prākṛit both बीजं, or बीजयं, (बीजयं); the former gives us the Gauṛian बीज, the latter the Gauṛian बीजा or बीया. There is, perhaps, not a single Gauṛian masculine noun in *आ* (that is, of course, only among those derived through the Prākṛit), which does not also occur (at least in Hindī) in the other form ending in *आ* or *ऐ* or *ऐ*. The latter forms very often are only Low Hindī, but in not a few instances both forms are used in High Hindī too; e. g. भरोस and भरोना *trust*, भौड़ and भौड़ा *earthen pot*, भार and भारा *load*, जोड़ and जोड़ा *pair*, पढ़ and पढ़ा *titled deed*, etc., etc. On the other hand, in some cases the form in *अ* is confined to the Low Hindī and that in *आ* chiefly to the High Hindī, as notably in the part. pres.; e. g., कहता *saying* is High Hindī, but कहत Low Hindī; High Hindī लगता *belonging*, Low Hindī लगत; High Hindī आता *coming*, Low Hindī आवत, etc. So also, as regards the adjectives, the High Hindī generally uses the ampler form in *आ*; but Low Hindī generally also the shorter form in *अ*; as Low Hindī बड़ *great*, ऊँच *high*, High Hindī बड़ा, ऊँचा; but सब and सबा both in High Hindī, (Low Hindī साब or साँब) etc.

That the *direct form* in *ऐ*, or *आ*, or *ऐ*, of the inflexional base of Gauṛian masculine nouns is derived from the Prākṛit nom. sing. of a base in *अक*, follows also as a result from our previous inquiry into the nature of the direct form of feminine and neuter nouns. For if the feminine termination in *ई* and the neuter termination in *ए* or *ऐ* or *ऊँ* of adjectives and of nouns generally, is a modification of the Prākṛit termination (resp.) *इया* and *अयं* (or *इयं*), it follows of necessity that the masculine terminations *आ*, *आ*, *ऐ*, corresponding to those feminine and neuter terminations, must also be derived from a Prākṛit termination *अयो* (= *अकः*), e. g., *high* is in Marāṭhī ऊँचा, ऊँची, ऊँचे, in Hindī ऊँचा (masculine and neuter), ऊँची (feminine). It is evident that if the Mar. and Hindī feminine ऊँची, is a



modification of the Prákrit उबयो, and the Mar. neuter ऊँचे° of the Prákrit उबयं (उबयं); the Maráthí and Hindí masculine ऊँचा must be a modification of the Prákrit उबयो. For this is the only Prákrit form, which would yield us a Prákrit feminine उबिया and a neuter उबयं.

This conclusion is confirmed by the fact, that Gaurian masculine bases in यो or यै, or या, and neuter bases एँ, यँ, ऊँ, etc., have an identical *oblique form*; viz., ending in या in Maráthí, in ए in Hindí, Bangálí, Sindhí, and in या in Gujaráti, Marwári, Naipálí. For as the *oblique form* is identical with the Prákrit organic genitive, and as masculine and neuter bases of identical final sound have identical genitives, it follows that Gaurian masculine bases in या, etc., and neuter bases in एँ, etc., must have the same *oblique form*, if they are derived both from an identical Prákrit base. Now they have an identical *oblique form*, hence they must be derived from an identical base. As regards the neuters in एँ, etc., it has been shown that their (Prákrit) base must be one in यय (= यक); hence the base of masculine nouns in या, etc., must also be one terminating in यय (= यक). E. g., ऊँचा (masculine) and ऊँचे° (neuter) have both the *oblique form* उँया; the latter represents the Prákrit form उबयस्स which is the genitive singular of both उबयो (masculine) and उबयं (neuter). As उबयं is the original of ऊँचे°, it only remains that उबयो must be the original of ऊँचा.

The termination यो is not the only modification of the Prákrit termination ययो. As a rule, when Prákrit has a hiatus, as in the case of ययो, Gaurian either inserts the semivowel य् or व्, or makes *sandhi*. In Hindí both alternatives occur; but the insertion of a semivowel is confined to Low Hindí and old Hindí, while the High Hindí knows only the *sandhi* form. Probably in other Gaurian languages, the forms with inserted semivowels may also be found. In Low Hindí, forms of both kinds occur; such as insert the semivowel व् and such as insert the semivowel य्. The former, as far as I know, occur only in Ganwári, and, probably, in all Low Hindí dialects of its class. But there they are very common; of every masculine noun in य or या a bye-form in यवा may be formed. E. g., we may say in Ganwári घाम or घामवा *heat*, घोड़ा or घोड़वा *horse*, and so forth. The two forms घामवा and घोड़वा are *formally* identical; simply because they are both derived from a *formally* identical Prákrit base; viz. Sanskrit घर्मः becomes in Prákrit घामो or घामयो, and these become in Gaurian घाम and घामवा resp.; Sanskrit घोटकः becomes in Prákrit घोड़यो, and this becomes in Gaurian either by *sandhi* घोड़ा, or, by insertions of व्, घोड़वा. The Prákrit words घामयो and घोड़यो have a *formally* identical base; viz. घर्मक and घोटक, formed by the affix क; hence they are also *formally* identical in Gaurian घामवा and घोड़वा. These ampler bye-forms generally convey the sense of *definiteness or contempt*; and in erotic poetry also of *affection*; as in the following Baiswári verses of Akhtar:



अरु लो मै तारे मंडरवा ॥  
 रहुँस रहुँस गले लागूँ पहरवा ॥  
 इतनी अर्ज मोरी मानो जो अखतर ॥  
 सास ननद की मै चोरी पहरवा ॥

Or

मारुँ री कटि कगवा बोलै ॥  
 राजा की अठरिया ॥ कगवा बालै ॥  
 जियरा डाले रे ॥

Here मंडरवा is the bye-form of मंडर *hut*, (Prákrit मंडलं or मंडलथं); पहरवा bye-form of पहर *hour*, (Pr. पहरो, or पहरथो, Sk. प्रहरः or प्रहरकः); कगवा bye-form of काग *crow* (Pr. कागो or कागथो). It has been already remarked in treating of the feminine nouns in इया, that the final Prákrit long आ is protected by the inserted semivowel य्. Another instance of this fact we observe here in the case of these Gaṇwári masculine nouns in अवा, where the final आ (for the Prákrit थो) has evidently been also preserved through the insertion of the semivowel व. We shall have some more occasions to observe this effect of the insertion of the semivowels य् or व्, and to note the fact that an inserted य् or व् may protect a final Prákritic long vowel, or diphthong, against the operation of the Gaurian law of *reduction*. It does not do so necessarily. Strictly the law is this: when the semivowel is inserted before the Prákrit final long vowel or diphthong, two alternative Gaurian forms are the result; one in which the final long vowel is preserved, and another in which it is reduced according to the ordinary Gaurian laws. Thus, if in the Prákrit form घोडथो the semivowel व् is inserted, we get the two Low Hindí forms घोडवा or घोडव. In the form घोडव, according to a further Gaurian Law, the final थ becomes quiescent, and the result of this change is the vocalisation of व to उ, which उ next combines (by *sandhi*) with the preceding थ to थो; hence घोडव becomes घोडो. Now these nominal forms in थो are in Low Hindí well known and regular alternatives of the other forms in अवा. They may be formed of any noun whatsoever; e. g. राम *Rám*, bye-forms रमवा or रमो; घर *house*, bye-forms घरवा or घरौ, etc. They must not be confounded with the common Braj Bháshá forms in थो, from which they can easily be distinguished, because the Low Hindí bye-forms in आ are *always* accented on the ultimate, while the Braj Bháshá main-forms in थो are *never* accented on the ultimate, but on the penultimate or antepenultimate; (2), because the Low Hindí forms in आ *always* shorten a long vowel in the penultimate syllable, while the Braj Bháshá forms *never* do so; (3), because the Low Hindí form corresponding to the Braj Bháshá main-form *always* ends in आ (or थ); e. g., Braj Bháshá main-form घोडो *ghórau*, Gaṇwári main-form घोडा *ghórā*; but bye-form घोडा *ghóraú*. It is mark-worthy that the changes of the forms in अवा and आ are clearly connected with the accent (that is not the Prákrit accent, but the Hindí



accent, or the stress which is laid on a particular syllable in pronouncing a Hindi word; what in prosody is called the *ictus*). The forms in अवा namely are accented on the ante-penultimate; thus रामवा is pronounced with the airesis or ictus on the first ā and *thesis* on the last ā, but the forms in आ are accented on the ultimate, thus रामौ is pronounced rāmaú. The fact is that when the final आ of रामवा is reduced, the accent is thrown forward on to the penultimate, that is, रामव is pronounced rāmáva, and if the final ā be quiescent, the form becomes naturally रामौ ramaú, as any one can convince himself by actual experiment.

Instances of the other kind of masculine form, which inserts not the semivowel व्, but य्, into the Prākṛit termination अथो (instead of contracting it by *sandhi* into ओ) occur in the Braj Bhāsha class of Low Hindi and in Marāṭhī. All the phenomena, which have been noticed in connection with the bye-form in अवा and आ, occur also in the case of these bye-forms in अया; thus, e. g., the Prākṛit forms रामथो, with inserted य्, will give the Gaurian form रामया, with the accent on the ante-penultimate (*i. e.*, *airesis* on the first ā, and *thesis* on the last ā), if final आ be retained. But there is an alternative form, in which the final आ is reduced to अ, thus रामय;\* here the accent falls on the penultimate ā, and the final अ becoming quiescent, the word becomes रामै ramaí, with the accent on the ultimate ऐ. Both these double forms in अया and ऐ exist in Gaurian. But while the double forms in अवा and आ are both found in the Gaurian Low-Hindi, I believe it is only the form in ऐ which is found in the Braj Hindī, and on the other hand the form in अया appears to be confined to Marāṭhī. The same name, e. g., which in Marāṭhī is रामया (or रम्या as it is customary to write), is in (the Braj) Hindī रामै; again Marāṭhī कन्धया is in Hindī कन्धै (Prākṛit कण्ठथो, Sanskrit कण्ठकः). I believe it is the custom in Marāṭhī, to suppress, in writing such word-forms, the initial अ of the affix अया and join the य् on to the final consonant of the base; thus राम्य for रामया, बाल्य for बालया, etc. This is merely a peculiarity of writing, which, in this case, is accommodated to the pronunciation; just as in Hindī some people write जान्ना for जानता, etc. In all Gaurian languages a short अ between two accented syllables (one *airesis*, the other *thesis*) is *quiescent*; and of course two different systems of writing may be followed, either the writing may be accommodated to the present pronunciation (as in Marāṭhī in this case), or to the etymology of the word. Perhaps it would be more consistent and more scientific to generally agree to follow the former method. There need be no fear of any obscuration thereby of the etymology of the word. But at all events uniformity should be observed; not some classes of words

\* In all these bye-forms the Marāṭhī retains the Prākṛit ante-penultimate vowel unchanged, whereas in Hindī it is always shortened.



written by one method and others by another.\* In Hindi (that is, modern Hindi), as I have already said, the bye-forms which insert the semivowel य्, appear always as ending in ऐ; as रमै, कन्है, etc. But in the oldest Hindi of the bard Chand-Bardāi, the intermediate and transitional form in अय (between अया and ऐ) is the only one which is met with, side by side with the neuter form in अयं, of which examples have been given in Essay IV. Exactly as there are neuters, like नमयं, अय्यानयं, in Chand, so has he also masculine nouns like लोहय iron (for High Hindi लोहा), क्रमय series (for High Hindi क्रम); as in the following verses—

\* If a short अ standing between two accented syllables, is followed by an inserted euphonic semivowel य्, then it does not become altogether quiescent, but merely becomes attenuated to the indistinct neutral vowel, out of which all distinct vowels are supposed to have arisen and which is found in all modern languages, and, e. g., in English is generally written *u*; thus while Marāṭhī रामया or Braj रमया is pronounced *Rāmyā* or *Ramyā*, the Gaṇwārī रमवा is pronounced *Ram'vā* or *Ramvā*. The observation of this rule, has led me to modify my opinion on the origin of the Marāṭhī Gen. Sing. in या and Hindi in ए, which I discussed in pp. 87 to 94 of Essay IV (J. A. S. vol. XLII, Part I, 1873.). I stated there that the original of those endings might be either दया or अया; and though the latter derivation appeared to be the more natural, I preferred the other, because it seemed to have more evidence in its favour. But the phonetic rule now noticed removes one of the chief difficulties in the way of अया being the original. And I would, therefore, now derive both the Marāṭhī gen. in या and the Hindi gen. in ए from an original form in अया. Thus the Prākṛit gen. of सोणयं would be सोनयाह and in the original Gauṛian सोनया (for सोनयाह), pronounced *sōnayā*, (i. e. *airesis* on *o*, *thesis* on final *ā*); here according to rule the medial अ becomes *quiescent*, i. e., the word is pronounced *sōnyā* (सोन्या), which is Marāṭhī; next *yā* changes to ए, and thus we obtain the Hindi form *sone* (सोने). Now according to the Marāṭhī custom (as noticed in the text) the quiescent अ is, in this case, invariably suppressed in writing; Mar. writes सोन्या; but just as राम्या is a contraction of रामया, so सोन्या is a contraction of सोनया. On the other hand the fact that the Marāṭhī gen. in या may be spelled either as वा or as अया, is also explained by the present rule. For before the semivowel य् the medial अ becomes merely *neutral* or indistinct, and therefore some will write it, others will omit it, according as it is more or less indistinctly pronounced by them. I may add here, another piece of evidence. A learned Marāṭhī (the Rev. Paṇḍit Nehemiah Goreh) writes to me: "If the name राम (or any name) belongs to a respectable man, then it is pronounced, as if it had no final vowel. But if it belongs to an inferior person, such as a boy or a servant, etc., then it is pronounced रामा or राम्या. In names of females, if the word ends in या, then in diminutive forms the या is changed with ई; as दुर्गा into दुर्गी." Observe that all three forms are identical, diminutives or depreciatives; and derived from Prākṛit bases formed with the affix क, which also may have that meaning; now these Marāṭhī forms in या and ई correspond to the ordinary Hindi forms in या and ई; and, hence, the latter are also derived from Prākṛit bases formed with the affix क. These Hindi words, no doubt, have no diminutive meaning; but so have also those Prākṛit bases generally no diminutive meaning.



साठि अंगुर लोचय किञ्जिय ।

सुकर सेसनामन सिर मिञ्जिय ॥ III, 66.

Again क्रमय समय विपरीत भय ।

उपयो अंतर पेद ॥ III, 52.

Again योकार आदि प्रनम्य नम्य गुह्य वानीय वंदे पयं ।

सिष्ट धारनधारयं वसुमती लक्ष्मी चरनाययं ॥ I, I.

Or कोकिल भंकार अंव वन करयं ॥

वर बंदर विरधं ।

कपोतयं नैव कलयन्ति ॥ I, 18.

The two last verses contain the examples धारनधारयं (for High-Hindī धारनधारत), and कपोतयं (for High Hindī कपोत, plural.)<sup>\*</sup> The discussion of the oblique form of these masculine nouns in अवा and अया I shall defer, till after we have passed in review all Gaurian masculine nouns, the final of which is formed by inserting a semivowel before the Prākṛit termination यो.

It has been stated that the more usual way of treating the Prākṛit masculine termination अया is not to insert the semivowel य or व, but to contract the words. This contraction (or sandhi) is made in a two-fold manner: either the vowel अ is dropped and thus the termination अयो reduced to यो, or the vowel अ is retained and thus अयो contracted to यौ. The latter method is peculiar to the Braj Bhāshā; the former is common to the other Low-Hindī dialects of that class. In High-Hindī both these harsh vowels (or diphthongs) are modified to the more agreeable long vowel आ; e. g., *gonē* is in Braj Bhāshā गयो, in Low-Hindī गयो, in High-Hindī गया, for Prākṛit गअयो, Sanskrit गतकः; again Sanskrit कथितः or amplified कथितकः *said* becomes in Prākṛit कथिअयो, and in the Braj Bhāshā कथौ, in Low-Hindī कथो, in High-Hindī कहा; or Sanskrit उच्चकः *high* becomes in Prākṛit उअयो, in Braj Bhāshā उचौ, in Low Hindī उचो, in High Hindī उँचा. This seems to me a truer and simpler explanation of the Braj Bhāshā termination यौ than that of taking it as a mere provincial broader pronun-

<sup>\*</sup> The final *anundāra* in these two instances indicates, I believe, the plural; just as in Marāṭhī the addition of a final *anundārikā* is indicative of the plural; e. g. घराचा *of a house*, but घराँचा *of houses*. If the semivowel य be not inserted, but sandhi made, we should have कपोतयं, contracted कपोताँ, a form which also frequently occurs in the old Hindī of Chand, and is still the usual form in Marwāṛī; and which in the modern Hindī is modified to कपोताँ. The final nasal of these plural forms is merely a deterioration of an original final न् which is still preserved in the modern Low Hindī dialects; e. g.,

इन कही सब बनबसियन मिल मोहि तुम पे पढायौ है ॥ Rājānīti, p. 30.

and occurs frequently in the old Hindī of Chand, beside the plural forms in अयं and आं; e. g.,

सम ब्रह्मरूप या सबद कडं ।

कौ उचिष्ट कवियन कहैं ॥ I, 7.

i. e. "why should poets call it a *réchauffé*."



ciation of the common Low Hindī termination *ओ*. For the Prākṛit termination *अओ* of which both *ओ* and *ओ* are modifications, contracts, as any one can test himself, if quickly pronounced, to *ओ*, and not immediately to *ओ*; and if it is necessary to consider either *ओ* or *ओ* as a modification of the other, and not both as direct modifications of *अओ*, it appears to me the form *ओ* must be considered as the more original of the two, as the immediate modification of the Prākṛit *अओ*, and *ओ*, as a modification of *ओ*.

In some Gaurian nouns the Gaurian termination *ओ*, the contraction of the Prākṛit termination *अओ*, is further reduced to the simple vowel *ऊ*; as in *तडू* *pony*, *वाटसरू* *traveller*, *भडू* *rice*, *याचकरू* *traveller*, and others. This is apparent from the fact that in Marāṭhī these nouns have an *oblique form* nouns in *आ* which is identical with the *oblique form* of masc. nouns in *ओ* or *आ* in Gujarātī, Naipālī, Marwārī, as will be shown below. It is also proved by the fact, that some of these masc. nouns in *ऊ* are also used, in Marāṭhī, as neuter nouns in *ऊ*, as *तडू* neuter or *तडू* masculine; and it has been shown in Essay IV that the neuter nouns in *ऊ* which have, in Marāṭhī, an *oblique form* in *आ*, are derived from a Prākṛit original in *अअ* (= *अक*); hence it follows that their corresponding masculine forms must be derived from a Prākṛit original in *अओ*. E. g., assuming that *वाटसरू* stands for an original Gaurian *वाटसरो* or *वाटसरा*, and this for the Prākṛit *वाटसरओ*, what follows? The gen. of *वाटसरओ* would be *वाटसरअस्सु* or *वाटसरअस* or *वाटसरअह*; the latter, according to Gaurian rule of sandhi, would contract to *वाटसरा* (originally *वाटसराह*), which is actually the *oblique form* of *वाटसरू*. Hence we may argue backwards that *वाटसरू* is a contraction of *वाटसरओ*. Similarly, Prākṛit *भडूओ* (Sanskrit *भट्टकः* of *भट्ट*) a *title of brahmans*, has genitive *भडूअस्सु*, or *भडूअस* or *भडूअह*; contracted in Gaurian *भडा* (originally *भडाह*), which is the *oblique form* of *भडू* (see Dadoba's Mar. Grammar, §. 223); it follows that *भडू* is a contraction of *भडूओ*.\* There are a few other nouns of this class (*viz.* ending in *ऊ*, which *ऊ* is a contraction of the Prākṛit termination *अओ*), which have an *oblique form* in *वा* or *अवा*. This is to be explained thus: that instead of contracting the Prākṛit genitive termination *अअह* by sandhi, the euphonic semivowel *व्* has been inserted. E. g., Sanskrit *श्यालः* or amplified *श्यालकः* *brother-in-law*; Prākṛit *सालओ*; Gaurian first *सालो* or *साला* (Hindī), next (reduced) *सालू* (Hindī) or *साडू* (Mar.). The gen. of the Prāk. is *सालअस्सु* or *सालअस* or *सालअह*; the latter becomes in Gaurian, by inserting euphonic *व्*, *साडवा* (originally *सालवाह*) or *साडा*, which is actually the *oblique form* of the Marāṭhī word *साडू*, and thus proves the identification of *साडू* with the Prākṛit *सालओ*. Again, *सांकू* *bridge* (for original Gaurian *साँको* or *साँका*) is a contraction of the Prākṛit *संकओ* or *संकमो*, Skr. *सङ्गमः*; the gen. of the Prākṛ.

\* The Mar. *भडू* is a diminutive term of contempt; just as the Skr. *भट्टकः*



is संकयस्स or संकयाम् or संकयाह; the latter becomes in Gaurian संकवा\* or संका (originally संकवाह), which is the present *oblique form* of संक. As noticed already, the medial य before the व has a neutral sound, and hence the spelling varies; sometimes it is written, sometimes it is suppressed. As will be shown afterwards, Maráthi possesses also some other masculine nouns in क which have an *oblique form* in वा, which, however, are derived from Prákrit originals in उथो (= उको); and thus they differ from the masculine nouns of which we are treating here, whose *oblique form* ends in या, and which are derived from Prákrit originals in अथो. There is a further class of Maráthi masculine nouns in क which have no *oblique form* at all. Now since the reduction of the Gaurian termination थो (for Prákrit अथो) to क is an *altogether Gaurian one*, while the contraction of the Prákrit termination उथो to क is partly Prákritic,† I think, we may conclude that all Maráthi masculine nouns in क, which do not admit an *oblique form*, are derived from Prákrit nouns in अथो (or original Gaurian nouns in थो), and not from Prákrit nouns in उथो.‡

The *oblique form* of the Gaurian nouns in या (थो or थै) ends either in या or in या or in ए. The termination या of the *oblique form* is common to the Gujaráti, Naipáli, and among Low-Hindí dialects, to the Gaṇwári and Maṇwári. The termination या is peculiar to Maráthi; and the termination ए to Sindhi, Panjábi, High-Hindí, and most Low-Hindí dialects of the Braj Bháshá class. E. g., घोड़ा or घोड़े horse has in Gujaráti घोडा ना, in Mar. घोड़ा चा, in Hindí घोड़े का. The origin of these *oblique forms* has been fully discussed in Essay IV. Whatever has been said about the neuter *oblique forms* in या, या and ए, applies of course, equally to the masculine *oblique forms*; viz., that they are derived from the Prákrit genitive of a base in अक, ending in अयस्स; so, however, that the *oblique form* in या is derived from the Prákrit genitive termination अयस्स by means of *sandhi* and the *oblique forms* in या and ए (the latter being a mere modification of the former) by means of the insertion of the euphonic semivowel य. (See note on page 56.) I have, however, to add as a further argument, which escaped my attention there, in support of the theory that the High Hindí termination ए is merely a phonetic modification of the Maráthi termination या, the fact, that in Maráthi itself adjectives have a two-fold form of the

\* In this case the व of the Gaurian form might also be merely a phonetic modification of the म in the Prákrit संकमाह; just as Gaurian कुवार prince for Prákrit कुमारो.

† There are a few isolated traces of the contraction of the termination उथो to क, in Prákrit already; as पवासू for पवासुथो; सय्वसू for सय्वसुथो; see note 5 to Essay IV, p. 105.

‡ Such *proper Gaurian* (not Prákritic) nouns in क are more common in poetry; e. g., चित्तू (for चित्तथो) friend, in Chand's verse:

रम देत सीप तुहि चित्तू चोर ॥ XXVIII, 63.



termination of the *oblique form*, viz. in या and in ए; e. g., to a good boy is चांगल्या or चांगले मुगल्या ला (See *Manual* § 75, 3. p. 39.) It will be sufficient here, merely to illustrate the theory by a few examples. Sanskrit घोटकः has the genitive घोटकस्य; Prākṛit घोडकस्स or घोडकाम or घोडकाह; in Gaurian the latter form is either contracted by *Sandhi* into घोडा (originally घोडाह), which is the *oblique form* in Gujarātī, Naipālī, Marwārī; or by inserting य् it becomes घोडया (originally घोडयाह) or, as spelled in Marāṭhī (on account of the quiescence of the medial अ) घोड्या (originally घोड्याह); and this, finally, contracts into घोडे, the *oblique form* of the word in Hindī. Again Sanskrit वाटसरः or amplified वाटसरकः *traveller* is in Prākṛit वाटसरओ, and in Gaurian contracted वाटसरह. The genitive of the Prākṛit base is वाटसरकस्स or वाटसरकाम or वाटसरकाह. The last form contracts by *sandhi* to वाटसरा (originally वाटसराह), which is the present Marāṭhī *oblique form* of the word. Again, Sanskrit कृतः or amplified कृतकः *done* is in Prākṛit किदया or किदयो or केलयो; in Gaurian (with inserted euphonic य्) कियो (Braj Bhāshā), कियो (Marwārī), किया (High Hindī), केला (Marāṭhī). The genitive of the Prākṛit base is (किदयस्स or किदयाम or) किदयाह or केलयाह; in Gaurian either 1., the euphonic य् is inserted, thus किदया (originally किदयाह) or केलया (originally केलयाह); the latter is the present Marāṭhī *oblique form* (with the peculiar Marāṭhī spelling) केल्या; the former contracts the termination यया to ए, thus किए, which is the present Hindī *oblique form* (generally with the euphonic य्) किये; or 2., Gaurian makes *sandhi* of the Prākṛit form किदयाह; thus किया (originally किदयाह), which is the present Marwārī *oblique form* (with euphonic य्) किया.

It is peculiar to Panjābī, that it possesses a number of masc. nouns of the category, now under consideration, which end in याँ, instead of या, as in all other Gaurian dialects. Similarly, the *oblique forms* of these Panjābī nouns end in एँ instead of ए, the termination common to all the Gaurian languages; e. g., *shopkeeper* is in Panjābī बाणीयाँ, while in Hindī it is बानिया or बानिया.\* The *oblique form* in Panjābī is बाणीएँ, in Hindī बानिये. The Panjābī shows this final *anunāsikā* occasionally also, in other kinds of nouns, both masc. and fem.; e. g., माँउ or माँऊ *mother*, गार्ँ *cow*, काँउ *crow*. This *anunāsikā* is, no doubt, identical in nature with the *anunāsikā* which we have seen is found in the termination of the *oblique form* of Gujarātī neuter nouns in उँ. It may either be a mere provincialism and inorganic addition, or, as suggested in a note appended to Essay IV, it may be a sort of compensation for the elision of a consonant; e. g., in बाणीयाँ for the elision of क contained in the original बाणिजको; in माँऊ or माँऊ either for the consonant

\* In Marāṭhī बाणी; the difference is this: the Hindī and Panjābī are derived from the Skr. बाणिजकः, Prāk. बाणिजओ; contracted to बाणीया or बाणिया; but the Marāṭhī form is derived from the Skr. बाणिजः, Pr. बाणिओ, contracted into बाणी; see below page 42, 5.



त् or क् of the original माटका (see below page 42, 4.); in मारु\*, of the consonant क् of the original गाविका; in काउ of the consonant क् in the original काकः, though in the latter word perhaps the anunāsiká might be a substitute for the nasal ण of the noun काण, which also means *crow*.

In Essay IV, it has been stated that the termination चक of bases formed with the affix क्, is sometimes modified into रुक, and sometimes to उक, and it has been shown how by these means some Maráthi neuter nouns in ई\* and ऊ arose. By an exactly analogous process of base-modification, masculine nouns in ई and ऊ seem to have arisen. The principle which I shall attempt to illustrate is, that the Gaurian termination ई of masc. nouns is derived from the Prákrit termination रथो; and the Gaurian termination ऊ of masc. nouns from the Prákrit termination उथो. But both Prákrit terminations रथो and उथो may arise in various ways: 1. The termination चक (*i. e.* च + क) of a base may be modified to रुक or उरु, whence the nom. sing. would be in Skr. रुकः or उरुः, in Prák. रथो or उथो; thus: Skr. प्रतिवासक (amplified from प्रतिवास) becomes प्रतिवासिक; nom. sing. प्रतिवासिकः; Pr. पड़वासिथो; Gaur. पड़ेसी (Hindí)\* Again, Skr. पिञ्जाकारक becomes पिञ्जाकारिक; nom. sg. Skr. पिञ्जाकारिकः, Pr. पिञ्जाचारिथो or पिंजारिथो; Gaur. पिंजारी Mar.† Again Skr. प्रहारक *watchman*; nom. sg. प्रहारकः, Pr. पहारथो Gaur. पहरा, (Hindí) or पहारा (Mar.); but the base becomes also प्रहारिक, nom. sg. प्रहारिकः, Pr. पहारिथो; Gaur. (Low Hindí) पहरौ (or पहरिया); moreover the base becomes also प्रहारक; nom. sg. प्रहारकः, Pr. पहारथो, Gaur. (Hindí) पहरू (or पहरवा or पहरवा). Again, स्नापक *barber* (Skr. नापित); nom. sg. स्नापकः, Pr. एहावथो, Gaur. (Hindí) न्हावा; the base becomes also स्नापिक, nom. sg. स्नापिकः, Prák. एहाविथो or नाविथो (see Subhá Chandra III, 50. Hema Chandra I, 230.) or नादथो; Gaur. (Mar.) न्हावी, or (Hindí) नाई; the base becomes moreover स्नापक, nom. sg. स्नापकः, Prák. एहावुथो or नावुथो or नाउथो; Gaur. (Mar.) न्हाक, or (Hindí) नाक.‡ Compare Skr. लडुकः *a kind of sweetmeat*, in Prák. लडुथो, which is in Gaurian (Hindí) लडू or (Mar.) लाडू.

2. The base may be one formed by the affixes रुक or उक (which, however, are probably mere modifications of the affix चक, so that the examples

\* See Hema Chandra I, 26, Subhá Chandra II, 43, where प्रतिश्रुत् is said to be in Prákrit पड़सुथा; Pr. Pr. IV, 15, has पड़सुदं.

† Or Skr. पिञ्जिकाकारक, Pr. पिंजिआचारथो or पिंजिआरथो; Gaur. पिंजियारो or पिंजियारा (Hindí.)

‡ The derivation of this word from the Skr. स्नापक is quite clear from the Prákrit initial एह. The servant who attended his master at his bath and shaved him, was called स्नापक. The Skr. नापित is probably a clumsy transliteration of the Prákrit title नाविथो; or else a corruption of the base स्नापिथ, which would be an equivalent of स्नापक, as suggested in M. Williams' Skr. Lexicon.



under this head, would in reality not differ from those under the former). Thus मालिक from माला+इक *gardener* (commonly मालिन्); nom. sing. मालिकः, Pr. मालिथो; Gaur. माली. Again ताम्बूलिक from ताम्बूल *betel* + इक *vender of betel*; nom. sing. ताम्बूलिकः, Pr. तांबूलिथो; Gaur. तांबूली (or तांबाली). Again तैलिक from तैल+इक *oilman*; nom. sing. तैलिकः, Prák. तैलिथो (see Śubha Chandra IV, 95. Hema Chandra II, 98.); Gaur. तेली. Hereto might also be referred the Hindí पड़ोसी *neighbour* from Skr. प्रतिवासिक (for the more usual प्रतिवासिन्), and पहरि watchman from Skr. प्रहरिक (for the more usual प्रहरिन्), which have been already noticed under No. 1. Again दृष्टिक *scorpion*, nom. sing. Skr. दृष्टिकः, but Prák. बिंदुथो or बिन्दुथो (see Pr. Pr. I, 15.) or बिन्दिथो; Gaur. (Hindí) बिच्छू, or, (Mar.) बिच्, or (Nai-páli) बिच्छी. Similarly प्रवासिक *neighbour* Skr. प्रवासिकः (more usually प्रवासी of प्रवासिन्); but Prák. पवासुथो (Śubha Chandra II, 53.) or पवास् (see Śubha Chandra II, 8. Hema Chandra I. 44.) Again, चुलुक *handful* (of चुल + उक), nom. sing. Skr. चुलुकः, Pr. चुलुथो; Gaur. चुजू.

3. Just as the affix क may be added to bases in अ, so it may be added also (though less usually) to bases in इ and उ; hence a base in इक or उक arises; e. g., कवि or amplified कविक *poet*, nom. sing. कविकः, Pr. कविथो; Gaur. (Hindí) कविया. Again, गुरु or amplified गुरुक *teacher*; nom. sing. गुरुकः, Prák. गुरुथो; Gaur. (Ganw.) गरवा. Again, कटु or amplified कटुक *pungent*, nom. sing. कटुकः, Pr. कटुथो, Gaur. कटुवा (or कट्वा.) In Hindí these forms are almost altogether confined to the Low-Hindí dialects, and are always formed by inserting the euphonic semi-vowel in the Prákrit termination. The Gaurian contracted forms in ई and ऊ of this kind of nouns hardly ever occur. In High Hindí these nouns are used almost always in their simple form, without the affix क; thus कवि *poet*, nom. sing. Sk. कविः Pr. कवी, Gaur. (reducing final long ई) कवि; गुरु *teacher*, nom. sing. Skr., गुरुः, Pr. गुरु; Gaur. गुरु, etc.

4. The Prákrit affix क may also be added to bases in ऋ. The vowel ऋ changes in Prákrit to इ (according to the general rule, Pr. Pr. I, 28. and special rule, Śubha Chandra II, 90. Hema Chandra I, 135.), whence we obtain Prákrit bases in इथ; or it changes to उ (see special rule, Śubha Chandra II, 88. 89. 90. Hema Chandra I, 131, 134, 135.), whence we get Prákrit bases in उथ. Thus Skr. भ्रातृ or amplified भ्रातृक *brother* nom. sing. भ्रातृकः; Prák. भाइथो (i. e. भानिको), or भाउथो (i. e. भातुको); Gaur. (Hindí) भाई or (Mar.) भाऊ. Again Skr. मातृ or amplified मातृक *mother*; nom. sing. मातृका; Prák. माइथा (i. e. मातिका) or माउथा (i. e. मातुका,) Gaur. (Hindí, Panjábí) माइ, or (Panjábí) माऊ. Again Skr. प्रपुत्र or amplified प्रपुत्रक *grandson*; nom. sing. प्रपुत्रकः; Prák. पणुथो; Gaur. पणू (Mar.).

5. There are miscellaneous Sanskrit bases which, though they contain some other consonant (not क), also yield in Prákrit a base in इथ or उथ;



e. g., Skr. बाणिज, nom. sing. बाणिजः, Prák. बाणिञ्चो; Gaur. बाणी (Mar.). Again, गेज्जम, nom. sing. गेज्जमः, Prák. गेज्जमो or गेज्जञ्चो; Gaur. गेज्ज.

It will have been seen from these examples that the Prák. nom. sing. in इञ्चो or उञ्चो of the bases in इञ्च and उञ्च, assume in Gaurian a double form; viz. either a form in ई and क, or one in इया and उवा. For here again, as everywhere, the two Gaurian phonetic laws come into play; viz. of obviating the Prákrit hiatus either through the insertion of the connecting semi-vowels य् or य्, or through the contraction of the two hiatus-vowels in sandhi. Those forms which are made by inserting the connecting semi-vowels य्, or व्, are very common in Gaurw. and in the Low Hindi generally, where they may be formed as alternative forms of any noun in ई or क, very often without any difference in meaning. The connecting semi-vowel य् is used for nouns in ई, and the connecting semi-vowel व् for nouns in क.\* E. g., *gardener* is in Gaurwári both माली and मलिया,† i. e. the Prákrit is मालिञ्चो, in which the Gaurian inserts य् between इ and चो, and thus protects and preserves the Prákrit final चो (or च्च). Again, *watchman* is पहरू or पहरौ or पहरवा or पहरिया; i. e. the Prákrit is पहारञ्चो or पहारिञ्चो, and the Gaurian, by inserting व् and य्, पहरवा and पहरिया. Then again, the inserted semi-vowels य् and व् protect the final Prákritic च्च.‡ So again *brother* is both भाई and भाइया. Sometimes these nouns in इया and उवा (like the feminine nouns with the identical termination) imply, as distinguished from the nouns in ई and

\* Rarely, also य् is inserted in the Prák. termination उञ्च; e. g., गुरुय् in the opening line of Chand's Epic, चोँकार आदि प्रनम्य नम्य गुरुय् वानीय बंदे पयं ॥

† The antepenultimate is shortened according to a peculiar Gaurwári law.

‡ In poetry the final long च्च is often found shortened for metre's sake; e. g., in the following verse (kavitta) of Chand,

कहै कनि सम कन्त । तन्त पावन बड़ कब्जिय ॥  
तन्त मन्त उचार । देवि दरसिय मन्ति हब्जिय ॥  
तन्त वोर उषन्त । रंग राजत सुप दाइय ॥  
बाल केल प्रत्यंग । सुरनि उदरि कविताइय ॥ I, 7,

We have here कब्जिय for कविद्या (Pr. कविञ्चो, Skr. कविकः); हब्जिय or हविद्या (Pr. हविञ्चो, Skr. हविकः); दाइय for दाइया (Pr. दाइञ्चो, Skr. दाइकः); कविताइय for कविताइया. The full form is also met with, when the metre admits, as in the following (ठमरी) of Akhtar—

निर्दय शाम ने झूय लिरं । पनघट पै ठाडी गूजरिया ॥  
पग धरत धरत लट पलट गयो ॥  
कूर पर गामर उलट गयो ॥  
कर पकरत कंगन उलट गयो । चल भार दे चखतर दौजरिया ॥

Here दौजरिया (Pr. दौकरिञ्चो, see Pr. Pr. IV, 15) *false* has kept the final long च्च to rhyme with the femin. गूजरिया.



ऊ, definiteness or affection or contempt. In High Hindi, they are rarely used, and when used, then only to express contempt or affection (as भइया *dear brother*) or diminution (as लुटिया *a small pot*.) There are, however, a small number of masc. nouns in इया, which are, altogether incorporated into the High Hindi, and of which no alternative form in ई exists at all; as भेड़िया *wolf* and a few others.\* Otherwise, the usual form of such nouns in High Hindi as well as in the other (literary) Gaurian languages, is that in ई and ऊ.

The process by which the Prākṛit terminations इओ and उओ are turned into ई and ऊ in Gaurian, is one altogether analogous to that by which the Prākṛit feminine terminations इआ and उआ are turned, in Gaurian, into ई and ऊ. It has been already fully explained. Its application to masc. nouns will be best shown by a few examples; e. g., Skr. इक्षिकः *scorpion* becomes in Prākṛit विच्छुओ or विंदुओ or विच्छिओ; in Gaurian, by one of its laws, the final ओ is reduced to उ or अ, thus विंदुअ or विच्छुअ or विच्छिअ; next, by another Gaurian law, the final hiatus-vowels are contracted by sandhi; thus we have the forms विच्छू (Hindi), विंचू (Mar.), and विच्छी (Naip.) Again, Skr. भ्राता or amplified भ्राटकः *brother*; Prāk. भाइओ or भाउओ; in Gaur., through the intermediate stage of भाइअ and भाउअ, they become भाई and भाऊ. Again, Skr. पहरि, Pr. पहरिओ or पहरओ; in Gaur. first पहरिअ and पहरअ, next पहरि and पहर, etc.

The correctness of this theory of derivation of the Gaurian masculine nouns in ई and ऊ, receives strong support from the *oblique form*, which most nouns in ई and a few nouns in ऊ admit in Marāṭhi. Most nouns in ऊ do not admit an *oblique form*; while most nouns in ई do admit one. This is quite in order; for, as I have shown in a former place, the termination ऊ is generally an *altogether Gaurian* formation, being a reduction of the original Gaurian termination ओ, itself a contraction of the Prākṛit termination अओ. On the other hand, the Gaurian termination ई is a partly Prākṛitic formation, being an immediate contraction of the Prākṛit termination इओ. Similarly, the Gaurian termination ऊ in those few nouns which admit an *oblique form*, is a partly Prākṛit formation, being an immediate contraction of the Prākṛit termination उओ.

The oblique form of the masculine nouns in ई terminates in या; that of the masculine nouns in ऊ in वा; e. g., माली *gardener* has genitive मायाचा; न्हावी *barber*, genitive न्हायाचा; भाऊ *brother*, genitive भाया चा; विंचू *scorpion*, genitive विंचाचा, etc. It has been stated already, that the Skr. इक्षिकः becomes in Prākṛit विंदुओ; the genitive is in Sanskrit इक्षिकस्य, in Prākṛit विंदुअस्स or विंदुअस or विंदुअह; in Gaurian the latter becomes

\* The reason of this exception is plain; it is simply to avoid confusion; e. g., भेड़ी *wolf*; the short form of भेड़िया could not be distinguished from भेड़ी *sheep*, except by the gender the former being masc., the latter feminine. भेड़िया means literally the *sheep-catcher*.



contracted by sandhi (according to Gaurian law) to विंछा (originally विंछाह) or, as it is spelled in Maráthí (according to a peculiar Maráthí phonetic law\*), विंछा. Again, Sanskrit लडुकः *sweetmeat*, Prákrit लडुको, has in the genitive Sanskrit लडुकस्य, Prákrit लडुकस्स or लडुकास or लडुकाह; in Gaurian the latter is contracted to लाहा (originally लाहाह). From the analogy of these, we may conclude that other nouns in क which have an *oblique form* in वा, must also be derived from Prákrit nouns in उओ (*i. e.* bases in उक); and their *oblique form* in वा is merely a phonetic modification of the Prákrit genitive. Thus the oblique form भावा must be derived from a Prákrit noun भाउओ *brother* (for भातुओ, Sanskrit भाटक); the genitive of भाउओ is भाउउस्स or भाउआस or भाउआह, the latter contracted in Gaurian becomes भावा (originally भावाह); similarly, पणतु must be derived from the Prákrit noun पणतुओ (for प्रनतुकः); the genitive of it is पणतुउस्स or पणतुआस or पणतुआह, which in Gaurian is contracted to पणत्वा (originally पणत्वाह), the present Maráthí *oblique form* of the word. Now we know from the Prákrit grammarians that these Prákrit nouns भाउ ओ, पणतुओ, etc., really do exist. Thus also Sanskrit गोधूमः *wheat*, Pr. गोऊओ (or गाऊमा); Gaurian गेहूँ (Hindí) or गहूँ (Maráthí); genitive Prákrit गोऊउस्स, or गोऊआस or गोऊआह; Gaurian contracted गहूँ (originally गहूँह), which is the present oblique form of the Maráthí word. All these *oblique forms* are occasionally spelled so, as to separate the semivowel व् from its conjunct consonant; thus विंछा or विंचवा; पणत्वा or पणतवा; गहूँ or गहवा; because in the case of the semivowel व्, there is a tendency in all the Gaurian dialects, to sound the neutral vowel before it. It should be noted, moreover, that in the case of all *oblique forms* in वा of such nouns in क, the termination क of which is a modification of the Prákrit termination उओ, the *conjunction* of व् with the base consonant is the more original and correct spelling. But in the case of all *oblique forms* in वा of such nouns in क, the termination क of which is a modification of the Prákrit termination अओ, the *separation* of व् from the base consonant is the better way of spelling.

The analogy of the masculine nouns in क leads us further to conclude that also the masculine nouns in र् which admit an *oblique form* in या, must be derived from a Prákrit base-form in रच (रक), the genitive of which, ending in रचस्स, or रचास or रचाह, is modified into the *oblique form* in या, and the nominative of which ending in रओ, is modified into the *direct form* in र्. To this may be added a further argument, that the genitive of the only other kind of Sanskrit or Prákrit base which might have come into con-

\* Maráthí has generally an unaspirate mute consonant, where the Hindí and Prákrit show an aspirate one; e. g., Skr. हस्ती, Prak. हत्ती, Hindí हाथी, Mar. हाती; Skr. सिक्क, Prak. सित्क, Hindí सीय, Maráthí सीत; Skr. हडिकः Pr. विंदुओ; Hindí बिन्दू, Mar. बिंचू, etc.



sideration (*viz.*, the base in इन् with a nominative in ई and genitive in इनः) cannot well be the original of the *oblique form* of the nouns in ई. E. g. माली *gardener*, might at first sight be supposed to be identical with the Sanskrit and Prākṛit noun माली, nominative singular of the base मालिन्; but then, the genitive of that noun is Sanskrit मालिनः, Prākṛit मालिणे, which form (*i. e.* मालिणे) could not well have been the original of the *oblique form* माया (Mar.) of the Gaurian noun माली; for it would be necessary to assume the elision of the nasal ण् and the change of the final ऐ to या, both phonetic modifications, otherwise without precedent.\* But besides मालिन्, the Sanskrit and Prākṛit have another base with the identical meaning, *viz.* मालिक. The genitive of this base would be Skr. मालिकस्य, Prāk. मालिचस्स or मालिचाम् or मालिचाह; Gaur. (contracted) माया (orig. मायाह), which is the present *oblique form* of the Gaurian noun माली. Hence it follows necessarily that the Gaurian *direct form* माली, must be also a modification of the nom. sing. of the base मालिक, *i. e.* Skr. मालिकः, Prāk. मालियो. Similarly the Gaurian noun तेली *oilman* must be derived from the nom. sing. तेलियो (Skr. तैलिकः) of the base तलिक; for its *oblique form* तेया leads us back to a Prāk. genitive तेलिचाम् or तेलिचस्स, belonging to the nom. तेलियो (not to तेली of तैलिन्).

It remains to examine the oblique form of those masculine nouns which by means of inserting the semivowel य् or व् have preserved the Prākṛit termination यो, and therefore terminate in चवा, चया, दया, उवा.

In High Hindī (not in Low Hindī, where they may be used without any appreciable modification of meaning) and in Marāṭhī, these nouns are commonly used to express *smallness* (and hence affection or contempt†).

\* Prākṛit final यो is in Gaurian always reduced to ज् or (quiescent) य्; but Prākṛit चया (चकः) contracted to Gaurian चो or चा.

† In the manual these nouns are not noticed at all. Dadoba in his grammar notices those in या (*i. e.* चया) only, see page 274. But the others do also occur occasionally. Molesworth in his Mar. dictionary mentions, e. g., बिचवा (*i. e.* बिचुवा) *sharp, a small dagger* (of बिचू *scorpion*), corresponding to Hindī बिडुवा or बिडूवा. Another means of forming these affectionate or contemptive diminutives is the affix डा, डी, डे (Mar.) or रा, री, रे (Hindī). So, e. g., in the Low Hindī verse —

मार्दरी कर्छी कगवा बाले ॥  
राजा की चटरिया ॥  
कगवा बाले ॥  
जीचरा डालेरे ॥

Here we have the diminutives कागवा *crow* (काग) and चटरिया *pinnacle* (चटरी), of the one kind; and मार्दरी *mother* (मार्द), जीचरा *soul* (जीच or जी), डालेरे *palpitates* (डाले), of the other kind. Regarding the Mar. diminutives in डा, see Dadoba, p. 272. Manual, pp. 113, and 34.



Their *oblique form* ends in High Hindî and the Low Hindî dialects of the Braj Bhāshā class in ए; that is, their termination changes to अवे, अये, इये, उवे; e. g., कड़वा *bitter*, gen. कड़वे का;—भेड़िया *wolf*, gen. भेड़िये का;—पहरवा *watchman*, gen. पहरवे का,\*—कामवा *small crow*, gen. कामवे का;—लुटिया *small pot*, gen. लुटिये का;—बिड़ुवा *small dagger*, gen. बिड़ुवे का. But in Marāṭhī and in the Low Hindî dialects of the Gaṇwāri class the *oblique form* of these nouns end in चा, that is the termination remains unchanged to outward appearance; e. g., the Mar. राम्या *small Rām*; gen. राम्या चा (i. e. राम्या चा); Gaṇw. घोड़ा *horse*, gen. घोड़ावा कै; लोटिया *drinking pot*, gen. लोटिया कै; पहरवा *watchman*, gen. पहरवा कै, etc. This circumstance, however, should not mislead to the conclusion that the *oblique* and *direct* forms are (formally) identical; that is, that in Gaurian these nouns belong to the *proper Gaurian* element. That this is probably not the case, but that the identity of the terminations of the *oblique* and *direct* forms is merely the accidental result of phonetic modifications, is sufficiently indicated by the fact that those terminations are different (i. e. चा and ए) in the other Low Hindî dialects. According to the method previously explained, these *oblique forms* would originate thus; e. g. the genitive of the Prākṛit भेड़िया would be भेड़ियस्सु or भेड़ियाम् or भेड़ियाह; the latter form becomes in Gaurian, by inserting the euphonic semivowel य, भेड़िया (originally भेड़ियाह), which is the *oblique form* of the word in Gaṇwāri; next, the final या is contracted into ए, thus भेड़िए or (with euphonic य inserted) भेड़िये, and this is the *oblique form* of the word in High Hindî and Braj Bhāshā.

In conclusion, I will again add tables, exhibiting at a glance the results arrived at in this essay and the previous one.

In the next essay (VI), I propose to examine an old Hindî *oblique form* of an altogether different kind from those hitherto discussed; viz. the *oblique forms* in हि and ह.

\* These three nouns are also High Hindî, and not diminutive; भेड़िया is derived by means of the affix हक from भेड़ *sheep*; just as माली *gardener* from माला *garland* and हक.



## I.—TABLE.\*

On bases in अ, इ, उ;

Showing the phonetic changes of nominal terminations in Sanskrit, Prákrit, and Gaurian.

A.—*Masculine*.

Nominative or Direct Form.			Genitive or Oblique Form.		
Skr.	Prák.	Gaurian.	Skr.	Prákrit.	Gaurian.
अः	ओ	{ उ S. and poet. H. अ H. M. G. P. N.	अस्य	अस्स, आस, आह,	(आह), आ M.
इः	ई	{ इ old H. अ H. M. G. P. N.	एः	इस्स, (ईस, ईह)	(ईह), ई M.
उः	ऊ	{ उ old H. अ H. M. G. P. N.	[ ओः	उस्स, (ऊस, ऊह)	(ऊह), ऊ M. ]

\* H. = Hindí; M. = Maráthí; P. = Panjábí; G. = Gujaráthí; N. = Naipálí; S. = Sindhí; Br. = Bráj Bháshá; Mr. = Marwáthí; Gw. = Gajwari; A. = Atwari. All forms inclosed in brackets are theoretical and hypothetical.



*B.—Feminina.*

आ	आ	अ H. M. P. G. N.	आयाः	आए, आर	ए M.
ई	ई	(र), अ H. M. P. G. N.	याः	ईए, ईर	ई M.
ऊ	ऊ	(उ) अ H. P.	(वाः	ऊए, ऊर	ऊ M. hypoth.)
ऋ	ई	(र) अ H. M. P. G. N.	एः or याः	इस्स, (ईम, ईर)	(ईर) } ई M.
उः	ऊ	(उ) अ H. P.	(ओः or वाः	उस्स, (ऊम, ऊर)	(ऊर) } ऊ M. hypoth.)

*C.—Neutra.*

अम्	अं	अ H. M. P. G. N.	अस्य	अस्स, आस, आर	(आर), आ M.
इ	ई	इ old. H. अ H. M. P. G. N.	(इनः	इस्स, (ईम, ईर)	(ईर) ई M.)
(उ)	उं	(उ) अ	उनः	उस्स, (ऊम, ऊर)	(ऊर), ऊ M.)



## II.—TABLE.

On bases in अ, इ, उ ;

Showing the derivation of Gaurian nominal terminations from Prákrit and Sanskrit.

A.—*Masculina*.

Nom. or Direct Form.		Gen. or Oblique Form.			Remarks.
Gaurian.	Prák.	Skr.	Gaurian	Prákrit.	
M. अ	अो	अः	आ (आइ)	आइ, आउ, अस्स	अस्स
H. P. G. N. अ	अो	अः	अ	—	—



*B.—Feminina.*

M. अ, (र)	रं	रः	रं, (रंर)	( रंर, रंर ), ररर	रः	fem. in Gaurian, but masc. in Skr. and Prāk.
H. P. G. N. अ (र)	रं	रः	अ	—	—	
H. P. अ, (उ)	उ	उः	अ	—	—	
M. अ (र)	रं	रः	रं ( रंर )	( रंर, रंर ), ररर or रंर, रंर	रः याः	fem. in Gaurian, as well as in Skr. and Prāk.
H. P. G. N. अ (र)	रं	रः	अ	—	—	
H. P. अ (उ)	उ	उः	अ	—	—	
M. अ	आ	आः	ए	आर, आर	आयाः	
H. P. G. N. अ	आ	आः	अ	—	—	
M. अ (र)	रं	रं	रं	रंर, रंर	याः	
H. P. G. N. अ (र)	रं	रं	अ	—	—	
H. P. अ (उ)	उ	उ	अ	—	—	

*C.—Neutra.*

M. अ	अं	अम्	आ ( आर )	( आर, आर ) अरर	अरर	neutr. in Marāthi, but masc. in all other Gaurian dialects.



### III.—TABLE.

On bases in ँ, ॠ, ॡ.

Examples to Tables I and II.

#### A.—*Masculina.*

Nom. or Direct Form.					Genitive or Oblique Form.		
No.	Base.	Skr.	Prák.	Gaurian.	Skr.	Prák.	Gaurian.
1.	धर्म in ॐ	धर्मः	धर्मो	धाम masc.	{ धर्मस्य —	{ धर्मस्य धर्मास धर्माद —	(धामाद), धामा M. धाम H. P. G. N.
2.	द्युति in ॠ	द्युतिः	द्युती	(द्युति) द्याग fem.	{ द्युतेः —	{ द्युतिस्स (द्युतिम) (द्युतीद) —	(द्यागीद), द्यागी M. द्याग H. P. G. N.
3.	बाह in ॡ	बाहः	बाह	{ — M. (बाह) बाह H. fem.	बाहेः —	{ बाहस्स (बाहम) (बाहद) —	बाह hypoth. M. बाह H. P. G. N.



*B.—Feminina.*

1.	जिह्वा in वा	जिह्वा	{ जीह्वा or जिह्वा }	जीम	{ जिह्वायाः जिह्वायाः }	{ जिह्वाए जिह्वाए }	जीमे M. जीम H. P. G. N.
2.	भगिनी in ई	भगिनी	भरणी	{ बहोण M. बहिन H. }	भगिन्याः	{ भरणीए भरणीए }	बहिली M. बहिन H. P.
3.	यशू in ऊ	यशू	ससू	{ — M. सास H. }	यशूः	{ ससूए ससूए }	सासू hypoth. M. सास H.
4.	भित्ति in र	भित्ति	भित्ति	भौत	{ भित्तिः or भित्तिः }	{ भित्तिस् etc. }	{ भौती M. — भौत H. }
5.	रत्न in उ	रत्न	{ उक्त् उक्त् उक्त् }	{ उक्त् M. उक्त् H. रत्न P. }	{ रत्नाः or रत्नाः }	{ उक्त्स् etc. उक्त्स् }	{ उक्त् theor. M. — उक्त् H. रत्न P. }



*C.—Neutra.*

1.	एह in अ	एहम्	घरं	घर	{ एहस्य — }	{ घरस्य घराम् घराह — }	(घराह) घर M.  घर H. P. G. N.
2.	अचि in र	अचि	अक्किं (अक्किं)	(अचि) आँख fem.	—	—	आँख H. (not used in M.)
3.	Examples of bases in उ wanting.						

*Notes to Tables I, II, III.*

*Note 1.*—Observe that the final of every noun, whatever its gender or termination in Prakrit (or Sanskrit) may be, becomes in Gaurian अ. This circumstance and the confusion to which it must necessarily have given rise, explains the two following facts: *viz.* (1) almost all masc. and neuter nouns with a base in र or उ and fem. nouns with feminine bases in र or उ, which came into the Gaurian through the Prakrit, have *now* disappeared from the Gaurian, and have been re-introduced into it *directly* from the Sanskrit. When thus introduced, they retain their final र or उ (only rejecting the visarga or anuswara), and र or उ, and this can easily be distinguished from other nouns. Thus we have in Gaurian the *Sanskritic* nouns कवि poet, प्रभु lord, धनु sound, नदी river, वधू wife, etc., instead of the Prakritic ones कव, पव, मन, नच or नय, वह, which have disappeared. The old Hindi of Chand has still पड for प्रभु, and वह is preserved in पतोह daughter-in-law, for पुत्रवधू.

2.—Those few masc. and neuter nouns with a base in र or उ, which have one into the Gaurian through the Prakrit and still remain in it, have changed their gender, namely, they have become feminine. Such are the *Prakritic* nouns आग fire (base अग्नि), fem. in Gaurian, but masc. in Prak. and Skr.; आँख eye (base अचि) fem. in Gaurian, but neuter in Prak. and Skr.; बाँह arm (base बाँह) fem. in Gaurian, but masc. in Prak. and Skr., etc. It may be asked, how is it, that in order to obtain uniformity of gender, all masc. and neuter nouns turned into fem., instead of all fem. and neuter nouns



turning into masc., which at first sight might appear the more natural course. The reason, I believe, is that by far the greatest majority of bases in र and उ are feminine (e. g., all those in ति), while there are comparatively only very few masc. and neuter bases in र and उ. Hence the preponderating influence of the fem. nouns assimilated the gender of the few masc. and neuter nouns. A similar result happened in the case of the neuter nouns in औ, ऊ, ई; when these dropped (as in the modern Hindi, Panjābī, etc.) their final *anunāsikā*, and thus their termination (आ, ऊ, ई) became identical with those of masc. and fem. nouns, the influence of the latter assimilated their gender; thus we have Hindi चोरी (for चोरी) *theft*, feminine for the Prākṛit neuter चोरि (Skr. चौर्य); or पानी *water* (for पानी) masculine for the Prākṛit neuter पानि (Skr. पानीय).

*Note 2.*—Feminine nouns in अ, derived from masc. or fem. bases in उ, or from fem. bases in ऊ, are very rare in Marāṭhī. There most of these nouns exist only with the amplified base, made by the affix क; thus while Hindi has तन *body* (base तनु feminine), the Marāṭhī has तनू from base तनुका; while Hindi has बहू *mother-in-law* from base बहू, Marāṭhī has साहू from base बहूका, etc. In Marāṭhī, it appears, those exceptional feminine nouns in अ form their *oblique form* anomalously in आ, following the analogy of the Marāṭhī masc. and neuter nouns in अ, and forgetting that their original (Sanskrit) base was not one in अ, but in उ; thus, कण *sugarcane* has gen. कणा चा, just as घास *grass* has gen. घासा चा, as if its original base had not been रू, but रूच. To judge from the analogy of the Marāṭhī fem. nouns in अ with bases in र, the *oblique form* of fem. nouns in अ with bases in उ, if regular, ought to have ended in ऊ; thus कण ought not to have an *oblique form* कणा, but कणू, Prāk. उचूह, उचूस) उचूसू or उचूरू.

*Note 3.*—The termination र of the oblique form of Marāṭhī fem. nouns in अ with bases in र, is to be explained thus: take, e. g., बोर of base बदरी *jujube tree*; the gen. would be in Sansk. बदरी, in Prāk. बोरी or बोरीर; the final र of the latter form is, in Gaurian, contracted by sandhi to र; thus we obtain the present Gaurian (Marāṭhī) form बोरी. Similarly, the termination र of the oblique form of Marāṭhī feminine nouns in अ with bases in आ, may be explained. E. g., जीभ with base जिह्वा *tongue*; the genitive would be in Sansk. जिह्वाया, in Prāk. जिह्वा or जिह्मार; the final आ of the latter form is, in Gaurian, contracted by sandhi to र; thus we obtain the present Gaurian (Marāṭhī) oblique form जीभे. Or its origin may be explained as in Essay IV., p. 63.



## IV.—TABLE.

On bases in अक, रक, उक,

Showing the phonetic changes of nominal terminations in Sanskrit, Prákrit, and Gaurian.

A.—*Masculina*.

Nominative or Direct form.			Genitive or Oblique form.		
Skr.	Prák.	Gaurian.	Skr.	Prákrit.	Gaurian.
अकः	अओ	{ ओ Br. ओ G. N. Mr. A. आ H. M. P. उ M. H. P. G. N. ओ P. अया Br. M. ऐ Br. अवा Gw. Br. औ Gw.         }	अकस्य	अअस्स, अआस, अआह	{ (आह) आ M. G. N. Mr. (अयाह, अया) या M. ए H. P. ऐ P. अये Br. (अवाह), अवा, वा M. अवे Br.         }
रकः	रओ	{ (रअ) ई M. H. P. G. N. रया Gw. Br.         }	रकस्य	रअस्स, रआस, रआह	{ (याह), या M. (रयाह) रया Gw. रये Br.         }
उकः	उओ	{ (उअ) उ M. H. P. G. N. उवा Gw. Br.         }	उकस्य	उअस्स, उआस, उआह	{ (वाह) वा, (अवा) M. (उवाह) उवा Gw. उवे Br.         }



*B.—Feminina.*

इका	इया	{ (इय) ई M. H. P. G. N. ई P. इया H.	इकायाः	इयाए	(इयाए), ये M.
उका	उया	{ (उय) ऊ M. H. P. G. N. ऊ P. उया H.	उकायाः	उयाए	(उयाए) वे M.

*C.—Neutra.*

अकम्	अयं	{ योँ Br., योँ Mr. B. ऊँ A. M. उँ G. उ N. अयं old H. ई M. (अयं, योँ, ऊँ, उँ ?)	अकस्य	अयस्स, अयाम्, अयाह	{ (आह), या M. G. N. Mr. (अयाह, अया) या M. ए H. (अवाह) अवा, वा M.
इकम्	इयं	(इयं), ई M.	इकस्य	इयस्स, इयाम्, इयाह	(याह) या M.
उकम्	उयं	(उयं), ऊँ M.	उकस्य	उयस्स, उयाम्, उयाह	(वाह) वा M.



## V.—TABLE.

On bases in चक, रक, उक,

showing the derivation of those Gaurian forms which are made from the Príkrit by means of *sandhi*.

A.—*Masculine.*

Nominative or Direct form.				Genitive or Oblique form.			
No.	Language.	Gaurian.	Prák.	Skr.	Gaurian.	Prákrit.	Sanskrit.
1.	M.	चा	चयो	चकः	या, (अयाह)	अयाह, अयास, अयस्स	चकस्य
2.	H. P.	चा	चयो	चकः	ए, (एह, अयाह)	अयाह, अयास, अयस्स	चकस्य
3.	P.	चाँ	चयो	चकः	एँ, (एँह, अयाह)	अयाह, अयास, अयस्स	चकस्य
4.	M.	चा	चया	चकः	जा, (याह)	अयाह, अयास, अयस्स	चकस्य



5.	G. Mr. N.	खो	खयो	अकः	वा, ( वाह )	अवाह, अवास, अयस्स	अकस्य
6.	old. M.	खो	खयो	अकः	या, ( अयाह )	अवाह, अवास, अयस्स	अकस्य
7.	B. A.	खो	खयो	अकः	ए, ( एह, अयाह )	अवाह, अवास, अयस्स	अकस्य
8.	M.	खो	खयो	अकः	खो	—	—
9.	Dr.	खो	खयो	अकः	ए, ( एह, अयाह )	अवाह, अवास, अयस्स	अकस्य
10.	M.	ई, ( रय )	रयो	रकः	या, ( याह )	रवाह, रवास, रयस्स	रकस्य
11.	P. H. G. N.	ई, ( रय )	रयो	रकः	ई —	—	—
12.	M.	ऊ ( खो )	खयो	अकः	वा, ( वाह )	अवाह, अवास, अयस्स	अकस्य
13.	M.	ऊ ( खो )	खयो	अकः	वा, अवा, ( अवाह )	अवाह, अवास, अयस्स	अकस्य
14.	M. H. P. G. N.	ऊ ( खो )	खयो	अकः	ऊ	—	—
15.	M.	ऊ ( उख )	उयो	उकः	वा, अवा, ( वाह )	अवाह, अवास, अयस्स	उकस्य
16.	H. P. G. N.	ऊ ( उख )	उयो	उकः	ऊ	—	—



*B.—Feminina.*

Nominative or Direct form.				Genitive or Oblique form.			
No.	Language.	Gaurian.	Prák.	Skr.	Gaurian.	Prákrit.	Sanskrit.
1.	M.	ई, (इच्च)	इथा	इका	ये, ( इए, इच्चए )	इथाए	इकायाः
2.	H. P. G. N.	ई, (इच्च)	इथा	इका	ई	—	—
3.	P.	ई° (इच्च)	इथा	इका	ई°	—	—
4.	M.	ऊ, (उच्च)	उथा	उका	वे ( उए, उच्चए )	उथाए	उकायाः
5.	H. P. G. N.	ऊ, (उच्च)	उथा	उका	ऊ	—	—
6.	P.	ऊं (उँच्च)	उथा	उका	ऊं	—	—



*C.—Neutra.*

1.	B. M.	बौ	बयं	बकम्	ए, ( एह, अयाह ) या ( याह )	अयाह, अयाम्, अयस्स अयाह, अयाम्, अयस्स	बकस्य बकस्य
2.	Mr.	बौ	बयं	बकम्			
3.	Br.	बौ	बयं	बकम्	ए ( एह, अयाह )	अयाह, अयाम्, अयस्स	बकस्य
4.	M.	ए ( अयं )	बयं	बकम्	या ( अया, अयाह )	अयाह, अयाम्, अयस्स	बकस्य
5.	M.	इ ( इयं )	इयं	इकम्	या ( याह )	इयाह, इयाम्, इयस्स	इकस्य
6.	M.	ऊं ( औं )	अयं	अकम्	आ ( आह )	आयाह, आयाम्, आयस्स	अकस्य
7.	M.	ऊं ( औं )	अयं	अकम्	वा, अवा ( अवाह )	आयाह, आयाम्, आयस्स	अकस्य
8.	A.	ऊं ( औं )	अयं	अकम्	ए, ( एह, अयाह )	अयाह, अयाम्, अयस्स	अकस्य
9.	M.	ऊं	उयं	उकम्	वा ( वाह ), अवा	उयाह, उयाम्, उयस्स	उकस्य
10.	G.	उं ( ऊं, औं )	अयं	अकम्	आं, ( आंह )	आयाह, आयाम्, आयस्स	अकस्य
11.	N.	उ ( उं )	अयं	अकम्	आ, आह	आयाह, आयाम्, आयस्स	अकस्य



## VI.—TABLE.

On bases in अक, इक, उक,

showing the derivation of those Gaurian forms which were made from the Prákrit by inserting the euphonic semi-vowels य or व.

## A.—Masculine.

Nom. or Direct form.				Genitive or Oblique form.			
No.	Language	Gaurian	Prák.	Skr.	Gaurian.	Prákrit.	Sanskrit.
1.	M.	या (अया)	अयो	अकः	अया (अयाह)	अयाह, अयाम्, अहस्म	अकस्य
2.	Br.	अया	अयो	अकः	अये (अयाह)	अयाह, अयाम्, अहस्म	अकस्य
3.	Br.	ऐ (अय)	अयो	अकः	ऐ	—	—
4.	GW.	अवा	अयो	अकः	अवा (अवाह)	अयाह, अयाम्, अहस्म	अकस्य
5.	Br.	अवा	अयो	अकः	अवे (अयाह)	अयाह, अयाम्, अहस्म	अकस्य
6.	GW.	ओ (अन)	अयो	अकः	या	—	—



7.	GW.	रया	रयो	रका	रया ( रयाच )	रयाच, रयाम, रयस्स	रकस्स
8.	BR.	रया	रयो	रका	रये ( रयाच )	रयाच, रयाम, रयस्स	रकस्स
9.	GW.	उवा	उवो	उका	उवा ( उवाच )	उवाच, उवाम, उवस्स	उकस्स
10.	BR.	उवा	उवो	उका	उवे ( उवाच )	उवाच, उवाम, उवस्स	उकस्स

*B.—Feminina.*

1.	H.	रया	रवा	रका	रया	—	—
2.	H.	उवा	उवा	उका	उवा	—	—

*C.—Neutra.*

Maráthi neuters in र (Table V, No. 4) and Maráthi neuters in ऋ (Table V, No. 7) might be also enumerated under this head.



VII.—TABLE.  
Examples to Tables I, II, III.

*Masculina.*

Nominative or Direct form.				Genitive or Oblique form.		
No.	Affix.	Skr.	Prak.	Gaurian.	Skr.	Prakrit.
1.	चक	घोटकः	घोटखो	{ घोटै Br. घोटो Mr. G. N. घोटो H. P. M. घोटवा, घोटै G.W.	घोटकस्य	{ घोटखसु घोटखाम घोटखारु
	च + क	रामः	रामखो	{ रामा M. * रामया M. रमय, रमै Br. रमवा G.W.	रामस्य	{ रामखसु रामखाम रामखारु
		खालः	खालखो	{ खालो Mr. G. N. खाल H. खालो M. खालो M. खालो M.	खालस्य	{ खालखसु खालखाम खालखारु
	चक for रक	मुषिकः	+ मुसखो	{ मुसा H. P. M. G. N. मुसवा G.W.	मुषिकस्य	{ मुसखाम etc. मुसखारु

\* These forms can only be made of nouns expressing rational beings in Maráthi ; but in Gauriá of every noun.

+ See Hema Chandra, I, 88. ; but there is also a Skr. noun मुषकः



2.	एक	मालिक (माली)	मालिखो	{ मालि H. P. G. N. मलिया GW.	{ मालिकस्य }	{ मालिखस्य मालिखाम मालिखाह	{ (माल्याह) माल्या M. (मलियाह) मलिया GW. (कवियाह) कविया GW. (म्हावयाह, म्हाव्या) म्हावे H. (म्हाव्याह) म्हाव्या M.
	एक for एक	कविः	कविखो	कविया GW. old H.	कवेः	कविखाह etc.	
	एक for एक	स्नापकः (नापितः)	{ एहावखो एहाविखा एहाउखो	म्हावा H. म्हावी M. नारं H. म्हाऊ M. नाऊ H.	स्नापकस्य	{ एहावखाह etc. एहाविखाह etc.	
	एक for एक	see	No. 3,	भाटक, etc.			
3.	एक	लडुकः	लडुखो	{ लडू H. लाडू M. G. लडुवा GW.	{ लडुकस्य }	{ लडुखस्य लडुखाम लडुखाह	{ (लाडुवाह) लाडुवा (लाडुवा) M. (लडुवाह) लडुवा GW.
	एक for एक	गुरुः	गुरुखो	{ गुरुय old H. गुरुवा GW.	गुराः	गुरुखाह etc.	(गुरुवाह) गुरुवा GW.
	एक for एक	see	No. 2,	म्हापकः etc.			
	एक for एक	दृष्टिकः	{ विन्धुखो विन्धुखो विन्धिखो	विन्धू M. विन्धू H. P. विन्धुवा GW. विन्धी N.	दृष्टिकस्य	{ विन्धुखस्य विन्धुखाम विन्धुखाह	{ (विन्धवाह) विन्धा (विन्धवा) M. (विन्धुवाह) विन्धुवा GW.
	एक for एक	भाटकः (भाच)	{ भारखा भाउखा	भारं H. P. भरया GW. भाऊ M.	भाटकस्य	{ भारखाह etc. भाउखाह etc.	{ (भारयाह) भरया GW. (भायाह) भावा M.



## Continuation of VII.—TABLE.

B.—*Feminina.*

Nominative or Direct form.					Genitive or Oblique form.		
No.	Affix	Skr.	Prāk.	Gaurian.	Skr.	Prakrit.	Gaurian.
1.	इक	(बीजं) (बीजिका)	बीचं बीदखा	बी M.	{ बीजस्य { बीजिकायाः	बीआस, बीआह बीदखाए	(बीआह, विया) (बीआए, बीए) } विये M. ?
		घोटिका	घोटिछा	{ घोडी M. H. P. G. N. { घोडिया GW.	—	—	—
2.	उक	बालुका	बालुखा	{ बाल M. H. { बलुवा GW.	बालुकायाः	बालुखाए	(बालुआए) बाल्वे M.
	उ+क	बद्रू	मासुखा	मासू M.	बद्रुवाः	मासुआए	(मासुआए) मासवे M.
	उक for इक	गैरिका	{ गैरिखा { गैरखा*	गैरी M. गैरू M. H. गुरवा GW.	—	—	—
	उक for कुक	माहका (माता)	{ माहखा { माउखा	माहं H. मरया GW. माज M.	—	—	—



*C.—Neutra.*

1.	अ + क	सुवर्णम्	सुवर्णञ्च	{ सोनो <sup>१</sup> M. सोनो <sup>२</sup> B. सोनो <sup>३</sup> A. सोनो <sup>४</sup> G. सोना H. सोनयं old H. सोने <sup>५</sup> M. सोनवा GW. }	सुवर्णस्य	{ सुवर्णश्च सुवर्णश्चाम सुवर्णश्चाह }	{ (सोनाह) सोना M. G. (सोनयाह) सोनया M. सोने H. (सोनवाह) सोनवा GW. }
	अक	(पिञ्जम्)	पिञ्जञ्च	{ (पिञ्जो <sup>१</sup> ) पिञ्जु <sup>२</sup> M. पिञ्जा H. पिञ्जवा GW. }	पिञ्जस्य	{ पिञ्जश्च पिञ्जश्चाम पिञ्जश्चाह }	{ (पिञ्जाह) पिञ्जा M. (पिञ्जयाह, पिञ्जया) पिञ्जे H. (पिञ्जवाह) पिञ्जवा GW. }
	अक	पेटकम्	पेटकञ्च	(पेल्वं, पेलो <sup>१</sup> ) पेल्लू <sup>२</sup> M.	पेटकस्य	पेटकश्चाह etc.	(पेल्लवाह) पेल्लवा, पेल्ला M.
	इक	मौक्तिकम्	मौक्तिकञ्च	{ मोतो <sup>१</sup> M. मोतो <sup>२</sup> H. मोतिया GW. }	मौक्तिकस्य	{ मोक्तिकश्च मोक्तिकश्चाम मोक्तिकश्चाह }	{ (मोत्याह) मोत्या M. (मोतियाह) मोतिया GW. }
	इ + क	दधि	दहिञ्च	{ दहो <sup>१</sup> M. दहो <sup>२</sup> H. दहिया GW. }	दधः	{ दहिश्चाम etc. दहिश्चाह }	{ (दह्याह) दह्या M. (दहियाह) दहिया GW. }
	उ + क	अयु	अंसुञ्च	{ आंसू <sup>१</sup> M. आंसू <sup>२</sup> H. आंसुवा GW. }	अयुः	{ अंसुश्चाम etc. अंसुश्चाह }	{ (आंसूवाह) आंसू M. (आंसुवाह) आंसुवा GW. }

\* Also Skr. गवेडुका or गवेडुकम् ।



*Translation of an Arabic Pamphlet on the History and Doctrines of the Wahhábis, written by 'Abdullah, grandson of 'Abdul Wahháb, the founder of Wahhábism.—By J. O'KINEALY, C. S., Calcutta.*

This pamphlet\* contains a complete description of the taking of Makkah, and shews that the Wahhábis looked on it in the same light as the Crusaders did the taking of Jerusalem. They entered the holy city not as warriors, but as pilgrims. It is interesting from a historical point of view, as it is a means by which we can test the conflicting statements of Burckhardt and Corancez; but what is of far greater interest is, that it proves, beyond all possibility of doubt, the identity on all important points of Wahhábí doctrines in Arabia with Wahhábí doctrines in India, and confirms the prevalent view that one is the offshoot of the other. Many parts corroborate the statements of Palgrave as to the intolerance of the sect, and there will be found towards the end a list of mortal sins, which are almost the same as those given in his book.

'Abdullah with several other Wahhábis of Najd was put to death in 1818 by Ibráhím Páshá, when the latter took Daráyah. His grandson 'Abdur-Rahmán, and his great-grandson 'Abdul Latíf were both alive when Palgrave visited that city in 1862.

#### TRANSLATION.

*In the name of God, the Compassionate and Merciful!*

Praise be to God, the Lord of the Universe, and blessing and peace be upon our prophet Muhammad, the faithful, and on his people and his companions, and those who lived after them, and their successors of the next generation! Now I was engaged in the holy war, carried on by those who truly believe in the Unity of God, when God, praised be He, graciously permitted us to enter Makkah, the holy, the exalted, at midday, on the 6th day of the week on the 8th of the month (Muharram), 1218, Hijrí. Before this, Sa'úd, our leader in the holy war, whom the Lord protect, had summoned the nobles, the divines, and the common people of Makkah; for indeed the leaders of the pilgrims and the rulers of Makkah had resolved on battle, and had risen up against us in the holy place (haram), to exclude us from the house of God. But when the army of the true believers advanced, the Lord filled their hearts with terror, and they fled hither and thither. Then our commander gave protection to every one within the holy place, while we, with shaven heads and hair cut short, entered with safety, crying

\* The original is preserved among the Government Dillí MSS. (Arabic MSS., No. 861).



"Labbaika," without fear of any created being, and only of the Lord God. Now, though we were more numerous, better armed and disciplined than the people of Makkah, yet we did not cut down their trees, neither did we hunt, nor shed any blood except the blood of victims, and of those four-footed beasts which the Lord has made lawful by his commands.

When our pilgrimage was over, we gathered the people together on the forenoon of the first day of the week, and our leader, whom the Lord save, explained to the divines what we required of the people, and for which we would slay them, *viz.*, a pure belief in the Unity of God Almighty. He pointed out to them that there was no dispute between us and them except on two points, and that one of these was a sincere belief in the unity of God, and a knowledge of the different kinds of prayer of which *du'á* was one. He added that to shew the significance of 'shirk,' the prophet (may he be blessed!) had put people to death on account of it; that he had continued to call upon them to believe in the Unity of God for some time after he became inspired, and that he had abandoned shirk before the Lord had declared to him the remaining four pillars of Islám. The second point related to actions lawful and unlawful as prohibited. He said that as regards these they retained but the name, while the use, nay any vestige of them, had altogether disappeared.

Then they jointly and severally admitted that our belief was best, and promised the Amír to be guided by the Qorán and the Sunnat. He accepted their promise and pardoned them. Neither did he give any of them the least annoyance, nor cease to treat them with the greatest friendship, especially the divines. And he spoke to them of our faith, publicly and privately giving them proofs of what he believed. We, too, asked them to discourse and confer with us and to speak the truth without reservation. Moreover, we explained to them what the Amír had spoken to them publicly, and pointed out the proofs of it in the Qorán and the Sunnat, and in the conduct of our spotless ancestors, such as the orthodox Caliphs who ruled over their followers. For the prophet had said, "upon you be my Sunnat, and the Sunnat of the orthodox Caliphs after me." We also gave them proofs from the four Imáms, Doctors of Divinity, and those who were instructed by them up to the third generation after the prophet, according to his saying: "Well, for you is my generation, next that which follows, and after it the succeeding generation." Again we pointed out to them that we were searchers after truth wheresoever it might be, and obeyed those proofs which were clear and open without caring whether they were opposed to what our ancestors had or had not done. In fine, they were not able to chide us for a single thing, while we showed them their errors in asking help in their necessities from the dead; and as they had still some a few doubts about it, we removed them by relevant proofs from the Qorán and the Sunnat. They



then acknowledged our belief, and there was not one amongst them who doubted or hesitated to believe that that for which we condemned men to death, was the truth pure and unsullied. And they swore a binding oath, although we had not asked them, that their hearts had been opened and their doubts removed, and that they were convinced whoever said, 'Oh prophet of God!' or 'Oh Ibn 'Abbās!' or 'Oh 'Abdul Qádir!' or called on any other created being, thus entreating him to turn away evil or grant what is good, (where the power belongs to God alone,) such as recovery from sickness, or victory over enemies, or protection from temptation, &c.; he is a 'Mushrik,' guilty of the most heinous form of shirk, his blood shall be shed and property confiscated. Nor is it any excuse that he believes the effective first cause in the movements of the universe is God, and only supplicates those mortals, who are between death and resurrection, to intercede for him or bring him nearer the presence of God, so that he may obtain what he requires from Him through them or through their intercession. Again, the tombs which had been erected over the remains of the pious, had become in these times as it were idols whither the people went to pray for what they required, they humbled themselves before them, and called upon those lying in them, in their distress, just as did those who were in darkness before the coming of Muhammad.

Among those present were Muftí Shaikh 'Abdulmalik ul-Qala'í, a Hanafite, Husain ul-Maghribí, a Málíkí Muftí, and 'Uqail bin Yabyá al-'Alawí.

When this was over, we razed all the large tombs in the city which the people generally worshipped and believed in, and by which they hoped to obtain benefits or ward off evil, so that there did not remain an idol to be adored in that pure city, for which God be praised. Then the taxes and customs we abolished, all the different kinds of instruments for using tobacco we destroyed, and tobacco itself we proclaimed forbidden. Next we burned the dwellings of those selling *hashish*, and living in open wickedness, and issued a proclamation, directing the people to constantly exercise themselves in prayer. They were not to pray in separate groups according to the different Imáms; but all were directed to arrange themselves at each time of prayer behind any Imám who is a (muqallid) follower of any of the four Imáms (may the Lord be pleased with them!). For in this way the Lord would be worshipped by as it were one voice, the faithful of all sects would become friendly disposed towards each other, and all dissensions would cease.

We appointed a ruler over them, 'Abd ul-Mu'in, the Sharíf, and his rule was established without shedding of blood, and without dishonoring or annoying any person. Praised be the Lord of the Universe!

Afterwards, we gave them a pamphlet, composed by Shaikh Muhammad



on the Unity of God, which contains all the arguments supported by their sentences bearing on it, in the Qorán and the Hadís which are *muwátir*, so that the souls might be comforted. And we compiled from extracts of it a smaller pamphlet fit for the common people which we commanded be distributed in their places of meeting, read in their assemblies and explained to them by the divines, so that by learning the doctrine of the Unity of God, and seizing it with a firm grasp, they might awake to the knowledge of shirk, and become careful. The pamphlet is as follows :

*In the name of God, the Merciful and Compassionate !*

Know that God has been kind to you, inasmuch as you are the best of the race of Abraham, and worship God in a pure manner. The Lord commanded all mankind to do so, and it was for this purpose He created them, as He said, "I only created the Jins and mankind to worship." Then know that God created you to worship Him, and know that there cannot be worship without belief in the Unity of God, just as He will not listen to a prayer unless offered up after purification. When shirk enters into any form of worship, it vitiates it, as is related in the Hadís. Also He has said, "Mushriks are not in a position to worship the Lord, since they testify against themselves that they are infidels. Their acts shall not avail them, and they shall burn for all eternity." Therefore, whoever calls upon other than God entreating him to grant something which is only within His power, such as obtaining a benefit or avoiding a misfortune, he, indeed, is guilty of *shirk* in his worship, as the Lord has said, "Those who go astray and call upon others beside the Lord, shall not be answered, even until the day of judgment; and those on whom they call, shall not heed them; and when mankind shall rise again from the dead, they will look upon their supplicators as their enemies, and their worship as infidelity." Again, the Lord has said, "Those whom you supplicate other than Me, can avail you nothing. When you supplicate them, they will not hear your supplication, and even should they hear you, they will not answer, and instead of speaking in your favour, they will adjudge you infidels on the day of judgment." In short, the Lord exalted and blessed has declared that entreating others than Him is shirk; therefore, whoever says, "Oh prophet of God," or "Oh Ibn 'Abbás," or "Oh 'Abdul Qádir," or "Oh beloved," &c., thinking that the person supplicated is a way unto the Lord, or an interceder with Him, or a means to Him, he is a Mushrik: his blood shall be shed, and his property confiscated unless he repent. And in the same way, whoever kills an animal in the name of other than God, or makes a vow to him or puts trust in him, hopes to be benefited, or fears to be injured by him, or asks him for assistance in those things which belong to God alone, he is a Mushrik, of whom the Lord has said, those who are guilty of shirk



towards Him, shall not be pardoned; but except these the Lord will pardon whomsoever He wishes! These also are as it were the Mushriks of Arabia, against whom the prophet (may he, &c.!) stood up in battle and commanded to worship with a pure heart. This is evident for four reasons given by God in the Qorán:

1st. It is known that the infidels against whom the prophet (may he &c.!) made war, had admitted that the Lord was the Supporter, the Creator, the Giver of life and death, the Ruler over all things. The proofs of this are the words of the Lord: "Say, who gives you food from the heavens and the earth? who is the Master of hearing and seeing? who calls forth life from death, and death from life? who rules events?" They will quickly say, 'God'. Then answer, "but you do not fear him."

And the Lord has said, "Say, if you know, whose is the earth and what is in it?" They will answer, 'it belongs to God'; then say, "is it not that you do not remember Him?" Again, "say, who is the Lord of the seven heavens, and Lord of the great 'Arsh?" They will answer, 'God.' Then say, "is it not that you do not fear Him?" Say, "if you know, who is he in whose hands is dominion over everything? who can compel, yet not be compelled?" They will quickly answer, 'God.' Then answer, "is it not that you do not fear Him?" After you have known this, and found it difficult to understand, how people who accept the scriptures, can supplicate others than God, turn to the second reason which is as follows:

They say, "we only turn towards and supplicate those departed, that they may intercede with God for us. We ask not from them, but from God, through their intercession." The proofs against this opinion are the words of God, "They worship other than God, that can neither harm nor profit them, and say, 'these have interceded for us with the Lord.'" Answer, "can you inform God of anything either in the heavens or the earth of which He has not knowledge. He is more holy and high than those whom you give Him as companions."

Those who have adopted not God, but others as a patron say, "we only worship them, that they may propitiate us with the Lord; for of a certainty He will decide favourably in matters with which they are concerned." They also hold as opposed to us that God will not point out the way of salvation to infidels or liars." Having understood this, turn towards the third reason, *viz.*, that he who calls on an idol to intercede for him, and he who though abandoning idols yet depends on holy persons, such as Christ, or His mother, or the angels, is in the same position. The proof of this is in the words of the Lord, "Those who seek a means to God, are they nearer Him? They hope for His mercy and fear His punishment, and certainly the punishment of your Lord is severe." And the prophet (may he be &c.!) has said, "There is no difference between those who



worship idols, and those who worship holy persons. They are both infidels." Moreover, we fought with them, until they all turned towards God.

The fourth reason is : The people the prophet speaks of, when in distress, took refuge with God and, forgetting their past conduct, abandoned shirk ; while the people of our times, when in difficulties, seek refuge in supplicating their Pírs. The Lord has said, " when they mount their ships, they supplicate God, taking refuge with Him.....besides God." Now, if you understood this, you will perceive that the Mushriks in the time of the prophet (may he be &c.!) were not guilty of such heinous shirk as the wiser Mushriks of our times. The former sought refuge with God in their distress ; the latter call upon their Pírs. The Lord is omniscient.

And among the persons who presented themselves before us with the people of Makkah and witnessed our victory in discussion, was Husain ul-Airat'í ul-Hazramí, afterwards al-Hayani. He continued to visit us and sit with Sa'úd and others of the force who were well learned in the scriptures, and he asked us of those matters other than the intercession of Saints, for which our swords were unsheathed. This he did fearlessly, and without any dread, as he was guiltless of any thing wrong in our eyes. So we informed him of our belief which is as follows : We believe, our sect holds the real true religion, is the sect of the Ahl-us-Sunnat and al-Jamá'at, and that our way to salvation is that of the pious ancient departed, most easy and excellent, and opposed to the doctrines of those who hold that the modern way is the best. We construe the Qorán and Hadişes according to the meaning apparent on the face of them, and leave the interpretation of them to God, for He is the Ruler. And for this reason that the divines who have passed away, so acted in answering the question as to whether the highest heaven is level or not, which arose out of the words of the merciful God, " The '*Arsh* is level ;" they held that " level" was well known, and as it was predicated of '*Arsh*, it was lawful to believe in it, and heretical to question it. We believe that good and evil proceed from God, the exalted ; that nothing happens in His kingdom, but what He commands ; that created beings do not possess free will, and are not accountable for their own acts ; but on the contrary they obtain rank and spiritual reward, merely as an act of grace, and suffer punishment justly, for God is not bound to do anything for His slaves. We believe that the faithful will see Him in the end, but we do not know under what form, as it was beyond our comprehension. And in the same way we follow Imám Ahmad Ibn Hanbal in matters of detail ; but we do not reject any one who follows any of the four Imáms, as we do the Shi'ahs, the Zaidiyyahs, and the Imániyyahs, &c., who belong to no regular churches. Nor do we admit them in any way to



act openly according to their vicious creeds ; on the contrary, we compelled them to follow one of the four Imáms. We do not claim to exercise our reason in all matters of religion, and none of our faith demand such a position, save that we follow our judgment where a point is clearly demonstrated to us in either the Qorán or the Sunnat still in force, and though there has been no special command in favour of it, yet there is nothing of weight against it. As a rule, we hold the same as the four Imáms ; but we reject all sects in connection with property inherited by our ancestors, and hold them preferred, although it is opposed to the Hanbali sect. We do not enquire to what sect a person belongs, neither do we abandon the forms prescribed by the four sects, except where we find a clear decision contrary to any of them and the matter is merely an outward observance, such as the action of an Imám at prayers. Hence we direct Malakis and Hanafis equally to collect themselves an instant, when standing or sitting before prostrating themselves at prayers, for on this point the evidence is clear. On the other hand, we do not prohibit the saying of " Bismillah " in a loud voice, as is the custom among Sháfi'is, neither do we direct it to be said inwardly. Where two contrary practices were in force, and the evidence in connection with each is strong, we declare both allowable, even though this is contrary to any sect. But this occurs only very rarely. The exercise of our reason in some matters of religion is not prohibited, nor can such be deemed contradictory to repudiating the right to exercise our reason in all religious matters ; for above all the four Imáms followed their own will in some minor religious observances, even so far as to act contrary to the rules of the sect which they founded.

We make use of the usual orthodox commentaries in striving to understand the Qorán, such as the Tafsír Jarír and its compendium by Ibn Kaşír the Sháfi'í, and so also the Baghawí, Baizáwí, Kházin, Haddád, Jalálain, and other commentaries. We also use the commentaries of the well known Imáms to explain the Hadíses, viz., 'Asqalání, Qustulání on Bukhári, the Nabawi on Muslim, Manáwí on Jámi'uççaghír, and Mukhawwaç on collections of Hadíses, as the Umahát us-sittah, or 'the six mothers,' their commentaries, the different books of all sects in all sciences, all ordinances, histories, grammar, and all sciences, helpmates to other sciences. We do not command the destruction of any writings except such as tend to cast people into infidelity to injure their faith, such as those on Logic, which have been prohibited by all Divines. But we are not very exacting with regard to books or documents of this nature, save if they appear to assist our opponents, we destroy them. As to the destruction of certain books belonging to the people of Táif by the Badawís, that proceeded from their ignorance, they were punished for it and so were others for the same thing. We do not consider it proper to make Arabs prisoners of war, nor have



we done so, neither do we fight with other nations. Finally, we do not consider it lawful to kill women or children.

As to those liars and concealers of the truth who say, that we explain the Qorán according to our own views and only hold those traditions which agree with our opinions, without having recourse to the well known commentaries on the one or taking into consideration the narrators of the other; that we lower the dignity of our prophet Muhammad (may, &c.) and say that he has rotted in his grave, and that any one of us would derive more advantage from his staff than from him; that he cannot intercede for us; that pilgrimage to his tomb is improper; and that he was so ignorant, as not to know positively "There is no God except God" until he became inspired;—we answer, 'only consider that this sentence "There is no God but God" was given forth in Madínah.' Moreover, they say, we do not attend to the sayings of the learned and destroy the writings of those adhering to any one sect, because though partly true, they are also partly false; that being numerous, we proclaim as infidels not only the people of our time, but all since the beginning of the tenth century (Hijrah), except those who hold as we do; that we do not enrol any person in our sect until he admits that he was a Mushrik, and his father died one; that we prohibit the invocation of our prophet (may, &c.) and pilgrimage to his grave even in cases where it is lawful; that whoever joins us, is considered as free of all incumbrances, *even his debts*; that we do not allow the Ahl-ul-bait (may the Lord be pleased with them!) any superior rights; that we compel them to marry inferiors, and that we force those who are old to put away their young wives, in order to marry them to young men among us, although no suit for a divorce has been instituted before us, nor is it desired by the parties. All this is simple nonsense, and when we are asked about them, we only answer in the words of the Qorán, "Praised be you. These are great calumnies." In short, whoever asserts any such thing of us, lies against us. He who has seen how we order our lives, has visited our meetings, or knows what we hold, can affirm that all these have been made up, and that the disseminators of them are enemies of religion, brothers of the devil, who lure men away from offering up their prayers to God, the exalted, in perfect accord with His Unity, and prevent them from abandoning those different kinds of shirk of which the Lord has declared that He will never forgive, though He will forgive whatever else He wishes. We believe that whoever commits a mortal sin, such as putting a Muslim to death, fornication, taking interest, drinking wines, or whoever repeats such, does not cease to be a Muslim, nor will he suffer eternal punishment, provided he dies entertaining a true belief in the Unity of God.

We believe that our prophet Muhammad (may he, &c.) is more exalted by God than any other created being; that he is alive, lives in his grave



a life quicker than that declared by revelation unto martyrs, and that he can hear the salutations of those who salute him. We consider pilgrimage is supported by legal custom, but it should not be undertaken except to a mosque, and for the purpose of praying in it. Therefore, whoever performs pilgrimage for this purpose, is not wrong, and doubtless those who spend the precious moments of their existence in invoking the Prophet, shall, according to the Hadīṣ, obtain happiness in this world and the next, and he will dispel their sorrows. We do not deny miraculous powers to the saints, but on the contrary allow them. They are under the guidance of the Lord, so long as they continue to follow the way pointed out in the laws and obey the prescribed rules. But whether alive or dead, they must not be made the object of any form of worship. This does not prevent us from asking them or any other Muslim if living to supplicate on our behalf. Thus it is related in the Hadīṣ that Al-mar-ul-Muslim asked that his brother might be accepted by God, and 'Omar directed 'Ali to ask Uwais to supplicate that he might be pardoned, and he did so. According to what has descended to us, our prophet Muhammad (may he, &c.) is empowered to intercede for us on the day of judgment, and so also are all prophets, angels, saints, and children. And we shall ask it of the Lord God, the Ruler over it, the Granter of it to whomsoever He pleases to those who are amongst the best of men, the believers in the Unity of God. Thus one of us entreating the Lord God Almighty shall say, O Lord, you have empowered our prophet Muhammad (may he, &c.) to intercede for us, &c. (in the form handed down by tradition), or we shall ask it of the Lord God, the Granter of it to us on the day of judgment. "O God, you have appointed your pure slave (mortal or angel, as may be) to intercede." Thus we shall ask God for those things which must be demanded from Him and not from them. And as regards the things over which God alone has power, no one will cry out "O prophet of God", or "O Saint of God, I ask your intercession," nor will any one say to this "help me", or "intercede for me", or "assist me." Since calling in this manner on those who are dead, but as yet not risen to judgment, is a form of shirk. There is nothing in its favour, either in the Qorán or the Sunnat. The pious departed have not urged it. On the contrary, they have decided that it is shirk of the most aggravated form, on account of which the prophet warred with the world.

To determine the effect of taking an oath in the name of other than God, it is necessary to look to the intention of the swearer. If he intends by the oath to give that respect which is due to God, or more, as happens among certain violent Mushriks of our time, who swear by their Shaikhs—their gods on whom they rely, such false oaths will not be accepted like those sworn in His name, and the swearers are, according to the general opinion of Muslims, Káfirs, guilty of the most heinous form of shirk, ignorant of



the most simple elements of their religion. When an oath is lightly taken, it is not an aggravated form of shirk; but such a habit must be sternly checked and the swearer directed to beg pardon of God.

As to conjunction with God, we hold that when one says, "O Lord, I shall obtain conjunction with you through the majesty of Muhammad," or "through our prophet," or "through the Majesty of your pure servants," or "through your servant so and so," this is a sort of worship, sinful in its nature, (especially as there has been no decision in favour of it), like the practice of invoking the prophet (may he, &c.) in a loud voice, at *Azán* time.

Now as regards the Ahl-ul-bait, a similar question, *viz.* the lawfulness of marrying a Fāṭimite, was asked of the people of Daráyah, and they answered in accordance with former decisions regarding them. It is right to be friendly and on good terms with them, as is stated in the Qorán and the Sunnat. But we must remember that *Islám* is the line of separation between us and the rest of mankind; and that there is neither grace nor goodness without piety which carries with it honor, respect, and reverence. All learned people are guided by it in the question of precedence, between persons nearly equal in age or knowledge, or in advancing to meet such when escorting them to the place of honor. But the custom which is prevalent in some cities, of honoring those who are young and ignorant, even so far that they are angry, beat, wound, or at least quarrel with those who do not kiss their hands instead of shaking them, is not based on any decision, nor is there any evidence in its favour. On the contrary, it is forbidden and should be abolished. If one person kisses the hand of another returning from a long journey, or if he does it to honor him for his learning, or after a long absence, it is harmless in itself, but is objectionable, as it becomes known to those who put faith in such things and creates a custom among proud people. Hence we absolutely prohibit it, especially on account of those of whom it is said as a warning: "It is not possible to close all the places where hunters watch." For this very reason we razed the house of the noble Khadíjah, the wife of our Prophet, the dwelling in which the prophet was born, and other places dedicated to certain Saints in Makkah, so that the people might be warned and flee from shirk, inconsistent with His exaltedness, and which He will never forgive. Shirk is worse even than saying God has a son; the latter makes Him superior to all created beings, the former does away with this superiority. For the Lord has said, "A parable is propounded to you about yourselves:" "What your right hands have obtained, is it for you or for your companions?"

The marriage of a Fāṭimite to a person not a Fāṭimite is not inconsistent with the conduct of Muslims, nor is it wrong. 'Alí and 'Omar-



ibn-ul-Khattāb so married. These two examples suffice. Sakinah, daughter of Husain-bin-'Alī, married four times, and none of her husbands was a Fāṭimite, or of the tribe of Banū Hāshim. Such was the custom of our ancestors, beyond all cavil. We do not compel any person to marry his slave until she demands it, or he is unable to marry his equal. Arabs are all equals for Arabs, and the contrary custom which prevails in many cities, is simply a proof of pride and a desire to exalt one's self, which, as has been foretold, is a certain cause of great evil.

A marriage with an unequal is lawful. Thus Zaid who was a slave married Zainab, the mother of the faithful, a daughter of the Qoraish tribe. This is well known to all sects and is conclusive.

Suppose it is objected by a person not desirous of embracing the truth, that according to our argument, *viz.*, whoever says, "O Prophet of God, I ask you to intercede for me," is a Mushrik, his blood shall be shed, applies to the mass of Muhammadans of modern times, and above all to the Divines who have believed this, and even despoiled those who opposed it. We answer, that it does not follow. The necessary consequence of a sect is not the sect itself, as is well known. So it is not necessary that we must be Mujassimah, though we speak of the "form" of God, but on the contrary we consider whoever dies in that persuasion is lost. We brand as *Kāfirs* only those who having heard our call to the true faith, are deaf to it, and who having heard the proofs in its favour, obstinately reject it. These are the predominant sects, these we war with, so long as they remain in wickedness, prohibit lawful acts, or assist others in committing grievous offences. The non-predominant sects we war with only when they assist the former, are pleased with them, or join them, and thus increase their numbers, becoming as it were predominant with them. Warring with them is commanded. We excuse the past generations. They were not protected from error, and their errors are excusable. And as to those who despoiled of their property such persons as did not agree with them, they were mistaken, and making a mistake is no harm. Indeed, better than they have made mistakes, as we know from the tradition of the woman and the decision about dower. History gives other examples. The companions of the prophet erred, when assembled together, with the prophet in their midst. But his glory penetrated them, and they said to a date tree "give us a sign," and it responded. We say, this is the position of those persons who having fallen away from the right way, subsequently awake to their errors; but not of those who are aware of proofs, know the words and practice of the Imāms, and yet remain persistently opposed to them till they die. We say that there is no harm in excusing persons in the first state, nor do we hold them *Kāfirs*, simply because they were in error, or even because they continued so. For none of their time opposed their doctrines either by words,



or the sword and spear. They knew of no proofs to the contrary and saw no clearer way. The greater number of the Musalmáns referred to by our opponents, neglected the advice of those who followed the Sunnat. As a rule they had totally forgotten the Sunnat, and even the few who were enlightened turned away from it before it could make any impression on their heart. The nobles persistently prohibited the multitude from hearing it, and the monarchs tortured those in whose heart its faintest trace could be found, except the few whom the Lord protected. Thus Mu'áwiyah and his friends opposed and fought against the Commander of the Faithful, 'Alí-ibn-Abí-Tálib. They were wrong and continued so to their deaths. Yet, though they were in error, as we clearly learn from the Ahl-ul-bait, that none of our pious ancestors considered them Káfirs according to Ijmá', or even very wicked; on the contrary they judged them worthy the reward of warriors in the cause of religion. So when we find a man orthodox in matters of faith, pure, pious, clean of heart, and seeking to benefit his sect by devoting his time to learning the useful sciences, or writing about them, we do not call him a Káfir, though he may hold wrong opinions on these or other points. This was the position of Ibn Hajar ul Haişamí, yet we consider his writing as well ordered, do not deny his knowledge for a single instant, but on the contrary take great care of some of his books, such as the Sharh ul-Arba'in, the Alzawájir, &c., believe what he has copied, and though in error in one point, he is one of the Divines of Islám with whom we hold. Any person of experience and wisdom, who is just and free from any leaning towards hard-heartedness or oppression, looks more to what is said than who says it. Again, the customs and habits of people in authority are obligatory. It matters not whether they are just, or unjust, exact imitations of those of whom God has said, "We found our fathers among them following their religion, and we, coming after them, imitate them in their customs and vices," who form a decision of what is right from the individual and not of the individual from his acts. With these last we seek no conversation; but we use the sword until they are truly and sincerely converted.

And, praised be the Lord, the army of the true believers in the Unity of God was victorious, its standards were unfurled under most auspicious circumstances, and "soon shall those in darkness see what turn their affairs shall take." Moreover, we were the more numerous, and God has said "our armies shall be greater in number," and so we were bound to assist the faithful and reward the religious.

As regards Bid'at, our doctrine is that Bid'at is whatever has been introduced after the third generation from Muhammad and is absolutely sinful. This is contrary to the doctrines of those who divide it into good and bad, and those who divide it into five kinds, unless as appears probable they mean to consider as "good" the acts of the pious departed which were optional,



*mandúbah*, and obligatory, and call it "bid'at," while "bad" refers to those acts which are unlawful or prohibited. There is no harm in so grouping them.

Among the forms of sinful bid'at which we prohibit, is raising one's voice at Azán time, on Friday night, during the Ramazán, or at either of the 'Ids (in Makkah we set aside every thing connected with *tazkir* and *tarkhim* as sinful according to the Divines of every sect), also reading the Hadíses of Abú-Hurairah before the Khatib on Fridays, which is denounced as Bid'at in the Jámí'-uqçaghír; assembling on certain particular occasions to read the story of the prophet's birth and believing that it is a special kind of prayer, even though the members of the assembly have no knowledge of history. There is no precedent for this. Again, we forbid people taking to themselves Pírs, or assembling to invoke their Pírs; calling on their Pírs with a loud voice, offering *fátihahs* to them, or seeking to obtain important advantages through them. For example, we prohibit the *rátib-us-Samán* and the *rátib-ul-haddád* as included in the more heinous form of shirk, for which we are ready to battle.

If any person abandon the right way, follows customs which are not Sunnat but Bid'at, and subsequently refuses to give them up, he is punished by the Magistrate, such punishment as shall seem fit until he repents.

We do not prohibit people from reading frequently pamphlets composed from extracts of the Qorán and Sunnat; and as to blessing the prophet, repeating his name, &c., begging pardon from God, reading the Qorán, &c., all these are commanded by the Law. Whoever exerts himself in such duties will be rewarded, and as his prayers increase, his reward increases in a greater proportion,—provided he offers them up according to law, without changing the words or the form of them. For God has said, "Call on your Lord secretly as a suppliant." And again, "God has beautiful names, call on him by them." The Kitáb-ul-Izkár is full of praises of God, whoever is a seeker of his God can be so with this book, which is in itself sufficient for religious people.

Among those things which we prohibit is the custom of reciting verses in praise of the prophet, and at the same time blessing him, that of repeating his name or reading it after Taráwih prayers under the belief that it is a form of prayer. Indeed, multitudes are under the idea that this is a custom undoubtedly handed down from our ancestors, and hence we forbid it. But the Taráwih itself is Sunnat, and there is nothing wrong in assembling to read it, or even in repeating it very often. Another form of Bid'at is the custom of reading the five prayers, which are *farz* after the close of Friday in the Ramazán. This has been prohibited by Ijmá', and we punish it most severely. There are other forms of Bid'at, such as taking the name of God in a loud



voice, when lifting a corpse or when sprinkling the grave with water. No authority for such has descended from the pious departed. In conclusion, it is as well to point out that Shaikh Al-Tartúsi-al-Maghribi has written a book called 'Al-báis fi-inkár-il-bida' wal-hawádig, and that Abú Shámah al Muqri has compiled from it a shorter pamphlet, which should be in the hands of all who are earnest in their faith.

We prohibit those forms of Bid'at that affect religion or pious works. Thus drinking coffee, reciting poetry, praising kings, do not affect religion or pious works and are not prohibited, so long as they are not mixed up with acts of the nature above described, neither do we prohibit *I'tikáf* in a mosque in the belief that it is a pious act. Thus Hasan told 'Omar ibn al Khaṭṭáb, Commander of the Faithful, that he had sung before one who was better than he, and 'Omar allowed him to sing.

All games are lawful. Our prophet (may, &c.) allowed Al-Habshí to play in his mosque on the 'Id day. So it is lawful to chide and punish persons in various ways; to train them in the use of different weapons; or to use anything which tends to encourage warriors in battle, such as a war-drum. But it must not be accompanied with musical instruments. These are forbidden, and indeed the difference between them and a war drum is clear. However the Daff is allowed at marriages. The prophet (may, &c.) has said, "Impurity has descended to us with purity." And again, "tell the Jews that our faith is not difficult."

We hold that Imám bin Qayam and his Shaikh are true Imáms, followers of the Ahl-us-Sunnat, and we hold their writings in the greatest respect, save that as regards them we are on every point *ghair-muqallid*, and every one of us is allowed to accept or reject their opinions, or the opinions of any person except those of the Prophet. It is well known that we hold opinions opposed to the Imáms on several points. Thus as regards giving three divorces in one assembly, in one sentence, we hold it obligatory following the four Imáms. We hold waqf proper, vows allowable, and their proper performance obligatory. Among the many forms of *bid'at* which we forbid, is offering up Fátihahs to Pírs after the five daily prayers; lauding them immoderately, and seeking conjunction with them after the manner in many cities.

Consolidating prayers, though considered by some as a most pious act, is as a rule a temptation towards shirk, though persons do not perceive it. For shirk is so imperceptible, that people are often unwittingly guilty of it. If not, why should our prophet (may, &c.) have sought protection from it, *viz.*, "O Lord, you have guarded me against knowingly committing shirk. Pardon me, if I have done it unwittingly. To you are known the most secret things." It is absolutely necessary that people should hold to these words, and avoid shirk as much as possible. And 'Omar ibn ul Khaṭṭáb



said, "The handle of Islám, that best of handles, will be broken." Then they asked "when," and he answered, when some Moslems know not the state of ignorance before the Prophet, &c. For these will do shirk and yet believe that it is a pious act. O God, guard us from backsliding and grant that our faith may not be impaired!

This is a short account of the heads of the conversation which, as already mentioned, we held with Husain ul-Airat'i. He often asked us to put it in writing, and as he was importunate, I have done so, but without referring to our religious books, as I have been busily employed in superintending matters connected with the Holy War. But whoever is desirous of knowing our belief, let him come to us at Darayah, and he will see what will gladden his heart, and his eyes will be pleased in reading the compilations on the different kinds of knowledge, especially the Tafsirs and Hadíses. He will see God praised in a pleasing manner; the assistance He gives in establishing the true faith; the kindness, which He exerts among the weak and feeble, between inhabitants and travellers.

We do not deny the doctrines of Çúfis, nor the purification of a person's soul from the stains of sin in deed or thought, provided the person who holds them is firm in his religious observances, and treads the straight road as marked out. But we do not undertake to carry it out in all our acts and deeds. Nor do we turn towards, ask assistance, or beg for aid from other than the Lord God, to whom alone we turn in all our acts. He is our Agent, our Master, our Deliverer. May peace and the blessing of God be upon our prince Muhammad and on his family and his companions!

'Abdullah, son of Muhammad, son of 'Abdul-Wahháb, wrote this in Muharram, 1218. [April, 1803, A. D.].

*Notes on Sunárgáon, Eastern Bengal.—By DR. J. WISE, Dháká.*

[With a plan and a plate.]

Sunárgáon, or, as the Hindús called it, Subarnagrám, was the capital of a Hindú principality anterior to the invasion of Muhammad Bakhtiyár Khiljí, A. D. 1203. At the date of the invasion, Lakshman Sen, of the Vaidya caste, was on the throne. He had made Nadiá his capital. Defeated he fled to the residence of his ancestor Ballál Sen in Bikrampúr, and either from there or Sunárgáon he ruled over the eastern districts. The natives of Bikrampúr still point out with pride the square moat of his palace, which is called "Ballál Bári."

The next thing we hear of regarding this part of the country, according to Mr. Taylor,\* is that it was governed by Muhammadan Qázis. One

\* Topography of Dacca, page 67.



resided at Bikrampūr, a second at Sunárgāon. The only one whose name has survived, is Pír Ádam, or, as he is called by the Muhammadans of Dháká, Ádam Shahid.\*

Local tradition represents Ballál Sen as ruling at Rámpál, about a mile from where the tomb now is, when Pír Ádam suddenly appeared with an army and caused pieces of cow's flesh to be thrown into the palace, which so enraged the monarch, that he marched against his enemy and killed him while at prayers on the spot where the masjid now stands.

The Hindú army is further stated to have been totally defeated at 'Abdullahpūr, a few miles to the west. It would appear that this tale has some foundation of truth. If there were two Ballál Sens, the later one the son of Lakshman Sen, the difficulties connected with this part of the history of Bengal disappears. That shortly after the invasion of Bakhtyár Khiljí officers of his penetrated into and subdued Eastern Bengal is certain; for if we follow Muhammadan historians, we find that in A. D. 1279 Tughril, or, as he styled himself, Sultán Mughísuddín, was Governor of Eastern Bengal, and his seat of government was Sunárgāon. At that date he invaded Jájnapar or Tiparah, and having carried off much treasure, he refused to remit any of it to Dihli.

The reigning monarch Ghiyásuddín Balban sent an army against his insubordinate deputy. It was defeated. A second shared the same fate. The emperor then marched in person against the rebel, and occupied Sunárgāon, having been joined in his advance by Dhinwaj Rái,† zamíndár of the city, with all his troops. Tughril fled, but was overtaken and slain, A. D. 1282. Having heard of the death of his enemy, Balban returned to Sunárgāon, and put every one of Tughril's family and his principal adherents to death. Not content with this barbarity, the historians record that he executed a hundred faqírs with their Qalandar, because they had instigated Tughril's rebellion, and had accepted from him three *mans* of gold to maintain their society.

Balban, having subdued the district, conferred the ensigns of royalty on

\* His tomb at a village called Qází-qaqbáh, south of Riqábi Bázár in Bikrampūr. It was surrounded by a wall and put in thorough repair about a hundred years ago. For centuries a lamp was placed every night on his grave; but the greater enlightenment of the present day, under Farází instruction, has put a stop to such profane rites. Adjoining is a six-domed masjid, with beautiful carved stone and brick-work in the interior. The inscription bears the name of Jaláluddín Fath Sháh, and the date is A. H. 888 (1483); *vide* J. A. S. B. for 1873, p. 286.

† The *modern* tradition in Tiparah is that the old name of the district was Jaház-nagar, or the "city of ships." This is evidently founded on the circumstance that, at a much later period, the revenue for the support of the nawárá, or imperial fleet, was derived from lands in this district.

‡ This is probably the same person as Dhinaj Madhub, who is believed to have been a grandson of Ballál Sen.



his second son Bughrá Khán, or Náqiruddín Mahmúd, and returned to Dihlí, where he soon afterwards died.

Bughrá Khán was succeeded in the government of Bengal by his sons, who resided chiefly at Lak'hnauti. About A. D. 1318, Shihábuddín Bughrá Sháh obtained the throne. His reign is believed to have been short. His brother Ghiyásuddín Bahádur deposed him, and assumed the title of Bahádur Sháh. The deposed monarch retired to Dihlí, and secured the intervention of Ghiyásuddín Tughluqsháh on his behalf. In 1323, the emperor in person advanced with an army to Sunárgáon. The usurper submitted, and was sent with a rope round his neck to Dihlí. An adopted son of the emperor, Fath Khán, was left in charge of Sunárgáon with the title of Bahrám Khán. He is said to have ruled his province "with much equity and propriety" for fourteen years. His death, which occurred at Sunárgáon, is fixed at A. H. 739 (A. D. 1338). From other sources, however, we learn that Bahádur Sháh struck coins at Sunárgáon in A. D. 1327, on which he acknowledges himself a vassal of Muhammad Tughluq. Two years afterwards, the coins bear the impress of his own name. It is conjectured that on the accession of Muhammad Tughluq, A. D. 1325, he reinstated Bahádur Sháh in the government of Sunárgáon, and that having rebelled again he was again defeated, and this time put to death. His dead body, Ibn Batútah tells us, was flayed, his skin stripped, and in this state circulated in all the provinces of the empire as a warning to other governors. It was probably at this later date that Bahrám Khán was elevated to the government of Sunárgáon.

In the following year, Bengal revolted from Muhammad Tughluq. The revolt was headed by Fakhruddín Mubárák, who had been 'siláhdár' or armour-bearer, to Bahrám Khán, and who now assumed the title of Sháh. Qadar Khán, Governor of Lak'hnauti, by order of the emperor, advanced towards Sunárgáon and totally defeated Fakhruddín, and took possession of Sunárgáon. Fakhruddín, though a fugitive, did not remain idle. He sent emissaries into the city who bribed the soldiers to kill Qadar Khán under the promise of distributing the treasure among them. The soldiers murdered their commander, and Fakhruddín returning put to death the wives and dependents of his rival. From A. D. 1339 to 1349, Mubárák Sháh held undisputed rule over Sunárgáon. He was succeeded by Ikhtiyáruddín Ghází Sháh, of whom nothing is known.

In 1341, Ibn Batútah travelled in Bengal, and visited Sunárgáon, but he gives us no description of the city. He narrates that Shaidá, formerly a faqír, having been appointed náib of Sátgáon, revolted and fled to Sunárgáon. Fakhruddín sent an army to besiege the city; but the inhabitants, afraid for their lives, seized the unfortunate Shaidá, and sent him prisoner to the king who put him to death.



Ghází Sháh succumbed to Shamsuddín Ilyás Sháh, who struck coins in Sunárgáon from 753 to 758 A. H. (A. D. 1352 to 1356). It was during his reign that the independence of Bengal was for the first time recognised at Dīhli.

On the coins Sunárgáon is designated "Hazrat i Jalál," a title afterwards given to Mu'azzamábád,\* which was made the mint city, probably in the reign of Sikandar Sháh, son of Shamsuddín. The name of Mu'azzamábád is found on coins from 1358 to 1379; but others with the name of Sikandar Sháh, and stamped at Sunárgáon, with the years from 1355 to 1362 marked on them, have been deciphered.

In 1367, Ghiyásuddín, son of the reigning monarch, rebelled and fled to Sunárgáon; there he collected an army and marched against his father. The two armies met at Gowálpárá, near Ja'farganj, in the Dháká district, and nearly opposite the junction of the Ganges and Jabuná. The father was carried off the field mortally wounded. Eighty years† ago, his tomb was still pointed out in the neighbourhood. Ghiyásuddín, whose title was A'zam Sháh, ascended the throne. He is chiefly famous for his correspondence with the poet Háfiz, whom he tried to induce to come and reside at his court. It is this monarch's tomb that is still shown at Sunárgáon (*vide* below and pl. VIII).

Sunárgáon in the 14th century seems to have been renowned for holy and learned men, and history informs us that Jait Mal (Jaláluddín), when he abandoned the Hindú religion, summoned from Sunárgáon Shaikh Zahid, to instruct him in the doctrines of Islám and direct him in the management of his kingdom.

It was probably about this time that Sunárgáon swarmed with pírs, faqírs, and other religious mendicants, to a greater extent perhaps than any other Indian city. Amidst the ruins and forest of modern Sunárgáon natives assert that at least 150 "gaddís" of faqírs are distinguishable. Why they should have resorted to this distant city, is difficult to explain.

In 1582, the khálichah, or exchequer, lands of Bengal were settled by

\* About twelve miles north-west of Sunárgáon, on the opposite bank of the Brahmaputra, is an old village, which gave its name to one of the parganahs of Sirkár Sunárgáon, called Mu'azzampúr, which Mr. Blochmann identifies with Mu'zzamábád. The only old building there now is the Dargáh of Sháh Langar. It attracts Muhammadan pilgrims from long distances, who make offerings on a stone which is believed to bear the holy man's foot-print.

† The tomb of this monarch is, I believe, still shown in the famous Adínah mosque at Panquah, built by him. The tradition, however, in this District is that he was buried where he fell. On the west of Ja'farganj, where the Jabuná flows at the present time, stood a village called Goáriah, where a Dargáh of Sikandar Sháh, and a langarkhánah, or hospital, erected by Jahángír, are said to have been. The "oldest inhabitant" is positive, however, that this dargáh was that of a faqír, and not that of a king.



Rájah Todar Mal. The ninth sirkár was Sunárgáon. Its boundaries were the Brahmaputra on the west, Silhat on the north, and the then independent principality of Tiparah on the east. It included the present large parganah of Bikrampúr in Dháká, Baldák'hál, Dak'hin Shahbázpúr, Dándarâ, Chandpúr in Tiparah, and Jogdiah in Noákhálí.

It is noteworthy that the city of Dháká was included in the seventh sirkár, that of Bázúhá.

In 1586, Mr. Ralph Fitch visited Sunárgáon. He is the only English traveller who has left any description of it. He found the country in a very unsettled state. The great city of Sripore\* at the junction of the Megna and Padma or Kirtumnásá was in rebellion under its chaudharí or chief-magistrate against the reigning monarch "Zibaldim Echebar" (Jaláluddin Akbar).

From Sripore Mr. Fitch proceeded to Sunárgáon, which was only five leagues distant. "King Isacan" ('Isá Khán) then ruled the city.

Owing to the incursions of Portuguese and Mag marauders, the seat of the Muhammadan government was transferred from Rájmahall to Dháká in 1608. It is interesting to mark how the name of Sunárgáon now disappears from the writings of the early European travellers, and that of Dháká takes its place. It is not named by Linschoten (1589), and Sir T. Roe (1615) mentions that the chief cities of Bengal were "Rajmahall and Dekaka." Sir J. Herbert (1630), however, includes Sunárgaon with Bucola, Seriepore, and Chatigam, among "the rich and well-peopled towns upon the Ganges." Mandelsloe (1639) writes of "Rájmahall, Kaka or Daka, Philipatum, and Sati-gam." In the "Cosmographie" of Peter Heylyn, published in 1657, Sunárgáon is placed on an island in the main stream of the Ganges.

Of the subsequent history of the city little is known, but the following fact I have ascertained. Sayyid Ghulam Muçtafá, the representative of a family which has held "lákharáj," or rent-free, land at Sa'dípúr close to Sunárgáon for several centuries, possesses a most interesting document which affords insight into the fate of the city. This document, or 'mahzarnámah,' is a petition from his ancestor to the emperor, soliciting a renewal of the sanad by which the property was held. It is signed by several of the inhabitants of Sunárgáon, and endorsed with the seals of two Qázis of the city. The witnesses testify from their own observation that Sunárgáon was pillaged by the Mags, and that all the papers belonging to the Sa'dípúr family were carried off. Unfortunately this petition has no date to it; but the sanad sent in reply,

\* Near Rájábáí, where these two great rivers meet, an island called Srípúr has always existed. There is still a tradition that it was formerly a place of great trade. At the present day, this island has joined on to the main land and is called Srípúr Tek, i. e., Srípúr Point. There was formerly a custom-house here, where *ságyir*, or transit duties were collected by the government.



signed by Sháh Jahán, bears the date A. H. 1033 (A. D. 1623). As Jahán-gír was then reigning, his son Sháh Jahán probably signed for his father. This supposition is confirmed by the words "A'lá Hazrat," which are used to distinguish the monarch.

From that date until the present, nothing is recorded of Sunárgáon. In Major Rennell's "Memoir," published in 1785, he describes the city as having "dwindled to a village." In 1809, Dr. Buchanan came to this part of the country with the intention of visiting Sunárgáon. The parganah\* he found was called Sunárgáon; but he was told that its proper name was Udhabganj.† He was also informed that Subarnagrám, or Sunárgáon, had been swept entirely away by the Brahmaputra, and had been situated a little south from where the custom house of Kálágáchhí now stands. This information was very incorrect. The city that tradition places south of Kálágáchhí was Sripúr, and is nearly fifteen miles south-west of Sunárgáon.

Sunárgáon is often mentioned by Muhammadan historians; but Mr. Blochmann informs me that it is not described by any of them. By Ibn Batútah it is designated as "impregnable," or, as the word may be also rendered, "inaccessible." On his arrival at Sunárgáon, Ibn Batútah found a junk preparing to sail for Java, which proves that even in the 14th century it must have been a mart of some importance.

It is to Mr. Ralph Fitch, "Merchant of London," that we are indebted for the only extant account of the city. He writes: "Sunárgáon is a town five leagues from Sripore, where there is the best and finest cloth made of cotton that is in all India. The chief king of all these countries is called Isacan, and he is chief of all the other kings, and he is a great friend to all Christians. The houses here, as they lie in most part of India, are very little, and covered with straw, and have a few mats round about the walls and the door, to keep out the tigers and the foxes; many of the people are very rich. Here they will eat no flesh, nor kill no beast; they live on rice, milk, and fruits. They go with a little cloth before them, and all the rest of their body is naked. Great store of cotton cloth goeth from hence, and much rice, wherewith they serve all India, Ceylon, Pegu, Malacca, Sumatra, and many other places."

About the same period, according to the *Áin-i-Akbarí*, sirkar Sunárgáon was renowned for the very beautiful cloth called kháqah, fabricated there, and also for a large reservoir of water in the town of Kayárah Sundar, which gave a peculiar whiteness to the cloth washed in it.

*Modern Sunárgáon.*—The following account of the old buildings of Sunárgáon was the result of a visit made in January, 1872. It includes a description of all that are known to the residents.

\* Montgomery Martin's *Eastern Bengal*, vol. III., page 43.

† Udhabganj is a village, about a mile east of Sunárgáon on the Mínákhálí River.



I.—*Páñch Pír Dargáh, in Mahallah Bág'halpúr.*—It is in a very ruinous state. The wall surrounding the enclosure has fallen down in places, and several large jungle trees grow close to the tombs, and will ultimately destroy them. The sepulchres of these five Pírs are placed parallel to one another, and are raised about four feet from the ground. The river Brahmaputra must in former days have flowed past them. It was at one time intended to cover the tombs with a roof, but the pillars never rose higher than a few feet. The age of those graves, the names of the holy men, and the country whence they came, are unknown to fame; the natives are satisfied by telling that they came from the 'pachhim,' i. e., west, and they cannot understand why anybody should wish to know more. At the south-west corner of the enclosure is a small uninteresting mosque, which, like the tombs, is rapidly falling into ruin.

This dargáh is considered so sacred that even Hindús *salaam* as they pass, and Muhammadan pilgrims resort to it from great distances. There are only two other shrines to which Muhammadans make pilgrimages in Eastern Bengal—one is the tomb of Sháh 'Alí at Mírpúr, a few miles north of Dháká; the other is the dargáh of Pír Badr Auliyá at Chátgáon. The latter is the patron saint of all Hindú and Muhammadan boatmen and fishermen in Eastern Bengal.

II.—About five hundred yards south-east, on the edge of a filthy trench called "Mag Dighi," is the tomb of Ghiyásuddin A'zam Sháh, king of Bengal, and correspondent of the poet Háfiz. This tomb has fallen to pieces. The iron clamps that bound the slabs together have rusted, and the roots of trees have undermined the massive stones. This mausoleum formerly consisted of a ponderous stone which occupied the centre, surrounded by pillars about five feet in height. These stones are all beautifully carved, and the corners of the slabs and the arabesque tracery are as perfect as the day they left the workman's hands. The stones are formed of hard, almost black, basalt. *Vide pl. VIII.\**

At the head is a prostrate sandstone pillar half buried in earth. It was apparently used, when erect, as a *chirághdán*, or stand for a light.

This tomb might be easily repaired, and the cost of doing so would be inconsiderable. There is no old building in Eastern Bengal which gives a better idea of Muhammadan taste than this ruined sepulchre; and there is none, when properly repaired, which would so long defy the ravages of time. The Muhammadans of Sunárgaon are too poor to reconstruct it themselves. They take great pride in showing it, although they know nothing about it but the name of the Sultán who is buried there, and they take every care that none of the stones are carried off. Unless Government undertakes the re-erection of this handsome tomb, it is not likely that anything will ever be done.

\* The lithograph was made from a photograph taken by Mr. W. Brennand, Principal of the Dháká College.



What increases the surprise of the visitor at seeing this tomb is the contrast between these beautifully carved stones strewn the bank of a filthy hole and the wild luxuriance of the surrounding forest. In close proximity are various tombs, reported to be those of the monarch's ministers. The roots of trees have destroyed them, and nothing now remains to mark the spot except the brick "pushta," which preserves the mounds from being washed away.

III.—The village of Magrápára is considered by the natives of Sunárgaon to be the site of the ancient city. It has in its immediate neighbourhood several undoubtedly old buildings, and within a short distance is an eminence which still bears the name of "Damdamah," or fort. This mound, which has a magnificent tamarind tree growing on its top, is circular, but no traces of fortifications are visible. It has been used for many years by the Muhammadans as their ' 'Áshúrkhárah' during the Muharram. On the tenth day, all the garlands and ornaments that are made in place of *ta'ziyahs* are here collected and admired by the people.

In the small market of Magrápára is the tomb of Munná Sháh Darwish. At the foot, a light is always burned at night. Every orthodox Muhammadan as he passes the tomb stops and mutters a prayer. This saint, about whom nothing is known, is said to have lived at the same time as the more famous Pír whose tomb stands a little to the north. This latter is called the dargáh of Khúndkár Muhammad Yúsuf. It contains the tombs of the saint, of his father, and of his wife. It consists of two elongated dome-roofed buildings, each surmounted by two pinnacles covered with or formed of gold.

If any attempt is made to steal the balls, the residents assert that the thief will certainly be struck blind. Some hardened sinner, however, has of late years succeeded in cutting off one; but the believers in this tale cannot tell what his fate was. These tombs are destitute of any ornament inside. They are kept scrupulously clean, and are covered with sheets, on which devotees throw a few pith-necklaces. When a ryot has reaped an unusually abundant harvest, he, in gratitude, presents a few bundles of ripe rice at the tomb. If any calamity, as the illness of a member of his family, is threatening, he brings rice, or "batásá," and prays the saint to avert the affliction. Hindús are as confident of the efficacy of this propitiatory offering, and as frequently employ it as the Muhammadans.

Close to the tombs is a modern Masjid with a "kitábah," or inscription, dated A. H. 1112 (A. D. 1700). It was probably erected by the Pír Muhammad Yúsuf. Facing the mosque is a small grave-yard, enclosed by a brickwall. The graves are numerous, but none are of any celebrity. Inserted in the wall at the left-hand side of the entrance is a large, black stone (2 feet by 1½). The natives believe that if a person has lost any



property, he has only to put a coating of lime on this stone and he will infallibly get the property back. It was covered with an inch and three quarters of lime at the date it was examined. On scraping off the plaster a beautiful Tughrá inscription was found, with the name Jaláluddín Fath Sháh, A. H. 889 (A. D. 1484).\* This is the oldest inscription discovered in the Dháká district, with the exception of the one on Adam Shahíd's tomb in Bikrampur, which bears the same king's name and the date, A. H. 888.

On the roadside near Magrápára are two other inscribed stones. The writing on both is continuous. It includes the name and title of 'Alá-ud-dín Husain Sháh, A. H. 919 (A. D. 1513).†

Close to the tomb above mentioned is a ruined gateway called the "Naubatkhanah," where musical instruments were sounded morning and evening to announce to travellers and faqirs that a place of shelter was at hand. At the back of the mosque are the ruins of a house called the "Tahwil," or treasury, where, within the memory of many living, feasts were given by the superintendent, or mutawalli, of the mosque. The present holder of this post is too poor to entertain any body. Still further to the north-west are the ruins of the dwellings of the Khúndkárs. It is only within late years that this building, which had an upper room at each end, has become uninhabitable. The last residents taught boys to recite the Qorán. Now-a-days no education is given in any part of Sunárgáon to Muhammadans.

In the Mahallah north of Magrápára, called Gohatta, is the tomb of a very celebrated Pir, known as Sháh 'Abdul 'Alá, *alias* Ponkai Díwán. It is narrated that he retired to the forest, where he sat for twelve years so absorbed in his devotions that he was unconscious of the lapse of time. When found, he had to be dug out of the mound the white-ants (ponka) had raised around him, and which reached to his neck. The same story is told of Valmiki the sage, and of others. This Pir must have died near the end of the last century, as his son Sháh Imám Bakhsh *alias* Chulu Miyán came, within the recollection of many living, from Silhat to die at Sunárgáon. Father and son lie buried close together. At the head of the former is placed the lattice-stone on which he spent his memorable twelve years. The tombs are otherwise of no interest. They are merely mud heaps kept carefully clean and covered over with a grass thatch.

In this same quarter a very large mosque formerly stood which was believed to have been built by the kings. It fell into ruins, and the proprietor sold the bricks to Hindús of Náráyanganj. Muhammadans extenuate this offence by asserting that the proprietor, who was a pensioned deputy-magistrate, was insane when he did it. The foundations even are being dug up. The walls had been eight feet thick. The remains of one of the

\* *Vide* J. A. S. B., 1873, Part I, p. 285.

† *Vide* J. A. S. B., 1872, Part I, p. 333.



"mihrábs" still standing, proved that the interior had been ornamented by carved bricks; no inscription was to be found.

IV.—On the road side east of Magrápára is a small mosque, called the Yúsufganj Masjid. It is rapidly going to pieces, as the dome is covered with masses of pípal trees, whose roots have penetrated into the interior. Its walls are 6 feet  $1\frac{1}{2}$  inches thick, which accounts for its standing erect so long.

V.—Beyond the village of Habíbpúr, on the right hand side of the road, is the tomb of "Paglá Sáhib," a very insignificant building. Various stories are told of the reason this Pír received such a singular name. One is that he became "mast," or light-headed, from the intensity of his devotions. Another, that he was a great thief-catcher, that he nailed every thief he caught to a wall, and then beheaded him. Having strung several heads together, he threw them into an adjoining "khál," which has ever since been known as the *munḍa málá*, i. e. necklace of heads. This tomb is so venerated that parents, Hindú and Muhammadan, dedicate at the tomb the "choṭṭí," or queue, of their child when dangerously ill. A little further on, the road crosses a nálah by a very fine Muhammadan bridge of great age. It is generally called the *Kampaní ke ganj ká pul*.

VI.—In a quarter near this, called Bári Makhlas, is a comparatively modern mosque, erected by Shaikh Gharíbullah, a former jánchandar, or examiner of cloth, to the Company. It bears the date A. H. 1182 (A. D. 1768), and it is still used by the Muhammadans living in the neighbourhood. Its pinnacles are made of glazed pottery, but the building generally is plain and devoid of interest.

VII.—Painám, although a most singular village, possesses few ancient buildings. There is, however, a fine Muhammadan bridge of three arches, called the Dallálpúr pul, over which the road goes to the *Kampaní ká koṭ'hí*. The roadway is very steep. It is formed of bricks arranged in circles of about five feet in diameter. The adjoining bridge leading into Painám village is made in the same way. These circles of bricks are kept in place by several large pillars of basalt laid flat at the toe or rise of the bridges.

The old *Kampaní ká koṭ'hí* is a quadrangular two-storied, native, brick building, with an arcaded court-yard inside. It was a hired house, and is now occupied by Hindú karmakars, or smiths.

In the one street of Painám is a modern and very ugly temple of Shiva, ornamented with numerous pinnacles.

In Amínpúr the ruins of the abode of the royal *krorí*, or tax-gatherer, is shown. Like all old ruins, it is said to contain fabulous treasures protected by most venomous snakes. A descendant of this family still resides in the neighbourhood. Close to his residence are the ruins of an old Hindú building, the only one existing in Sunárgáon. It is called "jhikoti," a



term applied to a building with an elongated dome roof formed of concrete, and with the walls pierced with numerous openings. It was formerly used for religious purposes.

VIII.—In the division called Goáldih, which consists of dense and impenetrable jungle traversed by a few foot-paths, are two mosques. The first is called 'Abdul Hamíd's Masjid. It is in good preservation, being a comparatively modern structure. Its "kitábah" bears the date A. H. 1116, (A. D. 1705).

About a hundred yards to the south is the oldest mosque in Sunárgaon. The residents call it the *purána*, or old, Goáldih mosque. Its *kitábah* had fallen out, but had been carefully preserved in the interior. On this stone is inscribed the name of 'Alá-uddin Husain Sháh, A. H. 925 (A. D. 1519).\*

This curious old mosque is fast going to ruin; pipal trees are growing luxuriantly on the dome, which is cracked, and will soon fall in, and creepers are clinging to the outside walls and aiding in the destruction.

It is built of red brick. Its exterior was formerly ornamented by finely carved bricks in imitation of flowers, but neglect and the lapse of centuries has left few uninjured. The interior is  $16\frac{1}{2}$  feet square. The square walls, as they ascend, become transformed into an octagon. At each corner are quarter domes or arches, and from the intermediate space or "pendentive" the dome rises. As usual there are three "mihrábs." The centre one is formed of dark basaltic stones, beautifully carved and ornamented with arabesque work. The two side ones are of brick, boldly cut and gracefully arranged. The bricks in the archways have been ground smooth by manual labour, and have not been moulded. The pillars at the doorways are sandstone, evidently the plunder of some Hindú shrine. Until twenty years ago this mosque was used for worship. The khádim, or servant, having died, no care was taken of the building, and the dome threatened to fall in, so that worshippers migrated to the modern mosque.

As they do at all the old buildings in Sunárgaon, Hindús *salaam* as they pass this Masjid.

IX.—Beneath a "gúlar," or wild fig tree, near Sa'dípúr is a mound with a large stone inscribed in Tughrá characters. Where it came from, or to what it belonged, no one knew. In the inscription the name of Sulţán Náçiruddin Nuçrat Sháh, A. H. 929 (A. D. 1523), is written.†

This stone was carefully removed and deposited in a place of safety at Sa'dípúr.

X.—The only other memorial of former days worth mentioning is the large Kháçnagar tank, south of Painám. It covers  $9\frac{1}{4}$  acres. The age of this reservoir is unknown. A few bricks on the west side are evidently

\* *Vide* J. A. S. B., 1873, Part I, p. 295.

† *Vide* J. A. S. B., 1872, p. 338.



the remains of a ghát. This tank has been gradually silting up, and in the month of April there is only six feet of water in it. In former days its banks were covered with the huts of weavers, who found that its water made their muslins remarkably white. The weavers have died out; but the dhobis who wash clothes in the tank now, assert that the purifying quality of the water surpasses that of any other tank or well.

Regarding the site of the old fort of Sunárgáon the residents can give little information. They state that a fort and a mosque, with its dome made of lac, formerly stood on the east of the modern village of Baid Bázár, where the Megná now flows. This is the most likely place for it to have stood, as it would have protected the city from the incursions of piratical ships coming up the river on the east.

Any account of Sunárgáon would be imperfect that did not mention the changes in the course of the Brahmaputra, which must have had a most important influence in the selection of the site and on its prosperity. It is a curious fact that the Kalika Puráná poetically relates, that when Balarám cut through the Himálayas with his axe to allow a passage for the pent up waters of the Brahmakund, the goddesses Lakhya and Jabuná both sought to marry the youthful Brahmaputra. The god made choice of the former, and their streams were blended into one. Within the last century, however, the waters of the Lakhya have been gradually drying up, while the main stream of the great river has joined with that of the Jabuná.

In the neighbourhood of Sunárgáon are two places connected in story with the earliest Hindú epics. Nangalband, *i. e.*, the place where the plough stopped, is the spot where Balarám checked his plough when he undertook to plough the Brahmaputra from its source. Near this is Pancho-mi Ghát, where the five Pándú brothers, while in their twelve years' exile, are traditionally said to have bathed. At both of these places thousands of Hindús annually resort to bathe, when the moon of the month of Chait is in a certain lunar mansion. These ancient legends appear to point to a period when the cultivated land terminated at Nangalband. The red laterite soil, which extends from the Gáro Hills through the Bhowal jungles, crops up here and there in the northern parganahs. In Sunárgáon, however, no traces of it are visible. That the alluvium washed down from the hills should first of all be deposited at the termination of this hard formation is most probable, and it was perhaps on this account, as well as on the inaccessibility of the place itself, that the Hindú princes expelled from Central Bengal were induced to found a city here.

In the distribution of the sirkárs of Bengal by Rájah Todar Mall, the Brahmaputra\* is said to have bounded Sunárgáon on the west. It does so at the present day; but the stream that bears that name is a shallow

\* Ibn Batúta calls the Brahmaputra *Al-nahr ulazraq*, 'the blue river'.



one. On the north-west of Sunárgaon, however, the dry bed of a river, which at one time must have been three or four miles broad, is still distinct. The Minákháli river, which now-a-days connects the Megná and Brahmaputra, was probably the course that the former took at some early date on its way to join the Lakhya opposite Náráyanganj. This supposition is supported by the fact that when Islám Khán built forts to prevent the Mag marauders from passing up the rivers, the site of one was Hájiganj; of a second, "Trivení," the confluence of three streams, (which could only be the Megná, Brahmaputra, and Lakhya); and of a third, Munshiganj; that this was the course of the Brahmaputra in former days seems certain. The old bed of the Brahmaputra still exists at Munshiganj, and on its banks is held the time-honoured fair of the Baruní, or Varuní, in the month of Kártik. The spot where this religious festival is held in honour of "the god of water," is where the Brahmaputra and the Burhiganga meet. The Burhigangá, or Dhaká River, was the old bed of the Ganges, when it flowed through the great swamps still existing between Nátor and Ja'farganj. Old Sunárgaon would in this case be favourably situated, being protected from the incursions of the hated Muhammadans by the Ganges and Brahmaputra on the west, and from the inroads of the savage hill tribes by the Megná on the east.

In Rennell's maps, published in 1785, the main stream of the Brahmaputra joins the Megná at Bhairab Bazar, as a small branch does at the present day. Seventy years ago, this was, I understand, the route followed in the hot season by all boats going to and from Ásam and Calcutta, and it is not two generations since the Balesar k'hál, which runs through Sunárgaon, was navigable all the year round.

Although it is impossible to fix the date of any of these changes, yet there is every probability that in the days when Sunárgaon was a royal city, its walls were washed by one or other of these great rivers. A visit to the jungle of Sunárgaon, intersected as it is by trenches of stagnant water and obstructed by raised mounds, suggests the idea that formerly the abodes of the people were elevated above the highest tides, and that the city was traversed by numerous canals and natural creeks. No situation could have been better adapted for a conquered people, whose safety lay in the rivers by which they were surrounded and in the boats which they possessed.

The site of the ancient Sunárgaon is covered by dense vegetation, through which a few winding footpaths pass. The inhabitants are few. The children are all sickly and suffering from spleen disease. The men are generally puny, and so apathetic, that they have not the energy to cut down the jungle, in the midst of which their houses are buried. In the rains all locomotion is by boat. The stagnant holes and swamps of the



cold season are then practicable, and the small native boats are punted throughout the jungle between the artificial mounds. In the cold season, these holes contain the most offensive water, laden with decaying vegetable matter. On the banks the largest alligators are seen basking contentedly. The trees are chiefly mangoes, the remains of former prosperity. One decayed stump at Sa'dípúr is still shown as the identical tree of which the unfortunate Sháh Shujá' ate while he halted at Sunárgaon. This variety is still called "Shujá'-pasand." Throughout the jungle wild guava, bel, almond, and ber trees are found. It is told by the residents with pride—as if the fact reflected honour on Sunárgaon—that one "khirní" tree (*Mimusops Kauki*) grows there, while in Dháká only two specimens exist. The "guláb jáman" that grows here is reputed to be of unusual delicacy. Sunárgaon pán is celebrated. It is known as "káfúrí," from the aroma it gives off when chewed, and is sold at the price of two birás (96 leaves) a rupee, while the next quality, "sachí," sells at six *paisá*, and the "sádah" at four to five *paisá*. The "mung dál" is also highly esteemed, and it surpasses in quality that grown in any other part of Eastern Bengal.

"Sárhí bhaja," or fried cream, is not prepared in any other place of this district, although it is, I believe, a common article of diet in Patna. The method of preparing it is only known to the manufacturers. A celebrated kind of *dahí*, or curd, is also made here. It is known as that of "Hari Dás Khání." It sells for four times the price of the country *dahí*.

The manufacture of the fine muslins, for which Sunárgaon was famous in former days, is now all but extinct. English thread is solely used by the weavers, and the famous "phúti kapás" is never cultivated. In the Báqirganj district, I believe, a little is still grown, but it is only used in making Brahmanical threads, for which English cotton is inadmissible. The only muslin now manufactured by the Hindú and Muhammadan weavers at Sunárgaon is "malmal." Jámadání, or embroidered cloth, is no longer worked at Sunárgaon, although it is at Dhámraí, Uttar Shíhpúr, and Qadam-Rasúl, in the neighbourhood. The art of weaving the still finer muslins, such as "tan-zib," "shabnam," and "áb-rawán," is unknown at the present day.

The decay of the cotton manufactures of Sunárgaon dated from the end of last century, when the Company ceased to purchase muslins. Before this change, as much as a lákh of rupees was annually distributed from the factory of Sunárgaon to the weavers, and it is estimated that there were then 1,400 families of Hindú and Muhammadan weavers in and around Dallálpúr. In the whole of Sunárgaon it is said that not more than fifty looms are now at work.

Another cause of the falling off in the manufacture of the finest muslins was the stoppage of the annual investment, called "malbús i kháç."



The zanánah of the Dihli emperors was supplied with these delicate cloths of Sunárgáon and Dháká; and in Aurangzib's reign a lákh and thirty thousand rupees were yearly expended under this head.

The unhealthiness of Sunárgáon has been another cause of the decline of the cotton trade, but the most influential of all has been the introduction of cheap English thread, which can be woven into cloth at a much lower price than the native can. A great trade in cotton cloth, chiefly English piece-goods, is carried on at Painam. The majority of the residents are prosperous merchants, who make extensive purchases in Calcutta and Dháká, which are disposed of in the villages around.

The separation at the present day of the Muhammadan and Hindú population of Sunárgáon is unusual. In all the mahallahs to the north and west of Magrápára, nine-tenths of the villagers are Muhammadans, while in those to the east the Hindú greatly preponderate. In Painam again there is not a single Muhammadan. The householders are chiefly ta'luqahdárs, who pay the Government revenue direct to the Dháká treasury. There are ninety of them in this village. There is also a superfluity of Brahmans. In Painam the castes are as follows—thirty houses of Brahmans, sixty-five of Saos, five of Bhúimális, and the remainder of Barbers, &c. At Aminpúr there is a Government school where the children of these families receive education. The Muhammadans of Sunárgáon are contented to remain uneducated; very few can even read the Qorán, and they have consequently all become Farázis. There are no pírs or faqírs resident at Sunárgáon now. The superintendent of the mosque at Magrápára is a native of Medinípúr, who has not as yet acquired the respect of the people. The one man to whom every one resorts for advice and help, and who is regarded as the most holy pír in Eastern Bengal, is Sháh Karím 'Alí. He was born in Silhat, and his residence for many years has been Jagannáthpúr in the Tiparah district. He is popularly believed to have the power of raising from the dead, and of causing rain to fall at his pleasure.

Sunárgáon is too poor to support saints now, so the saints have migrated to places where the alms of the rich will furnish them with the luxuries which in this degenerate age they find to be necessary.

The Muhammadan women of Sunárgáon are all "pardah-nishín." With the changes in the course of the rivers they have been put to much inconvenience and expense. They are no longer able to visit their friends by stepping into a boat and being rowed to the house. They have either to stay at home, or make the trip in a pálkí.

There are several families in Sunárgáon who claim to be descendants of the old Qázis, but there are none who call themselves Mughuls. Only one man, who is still looked up to as the descendant of an official of the days when Sunárgáon was a royal city, has the unmistakable colour and features of the high-born Tátár race.



*Note on a new gold coin of Mahmūd Sháh bin Muhammad Sháh bin Tughluq Sháh, of Dihlí.—By J. G. DELMERICK, Esq., Dihlí.*

(With a woodcut.)

Muhammad bin Tughluq Sháh died, according to Ziá i Baraní, near Tattah, on the 21st Muharram, A. H. 752; and three days after his death, Shams i Siráj relates that Fírúz Sháh assumed the robes of sovereignty in camp, and shortly after marched viá Dípálpúr and Sirsá to Dihlí.

In the meanwhile, at Dihlí, Khwájah Jahán, a relation of the late king and Governor of the Capital, on hearing of the death of Sultán Muhammad, placed a boy, aged six years, a son of the late king, upon the throne. The name of this son is not given by either Ziáuddin Baraní or Shams i Siráj, who both write of him as a pretended or supposititious son. Several other Historians whose works I have consulted, are also silent as regards his name or title, but both are correctly given in the Khulácat ut-Tawárikh of Suján Rái K'hatri, a comparatively modern compilation. My edition of Firishtah erroneously calls him Muhammad, the same as his father. Firishtah, however, thought that there was strong reason for believing that the child set up at Dihlí by Khwájah Jahán was actually a son of Muhammad bin Tughluq.

Fírúz Sháh marched to Dihlí, and on his approaching the city, Khwájah Jahán finding that nearly all the adherents of the young king had forsaken him, and joined the popular aspirant, went out himself to Fathábád to meet Fírúz Sháh and to obtain forgiveness.\*

Fírúz Sháh personally wished to forgive him, for he was a very old man; but it was deemed impolitic to do so by the royal advisers, and he was therefore decapitated.

The fate of the child, the hapless pageant of royalty, is unknown and has not been recorded; but it is not improbable that he, too, like his aged relative, Khwájah Jahán, met with a tragic end.

Fírúz Sháh entered Dihlí on the 22nd Rajab, 752.



\* Vide page 285, Vol. III, of Elliot's Muhammadan Historians, by Dowson.



GOLD COIN. Rare, A. H. 752.\* Weight, 170 grains.

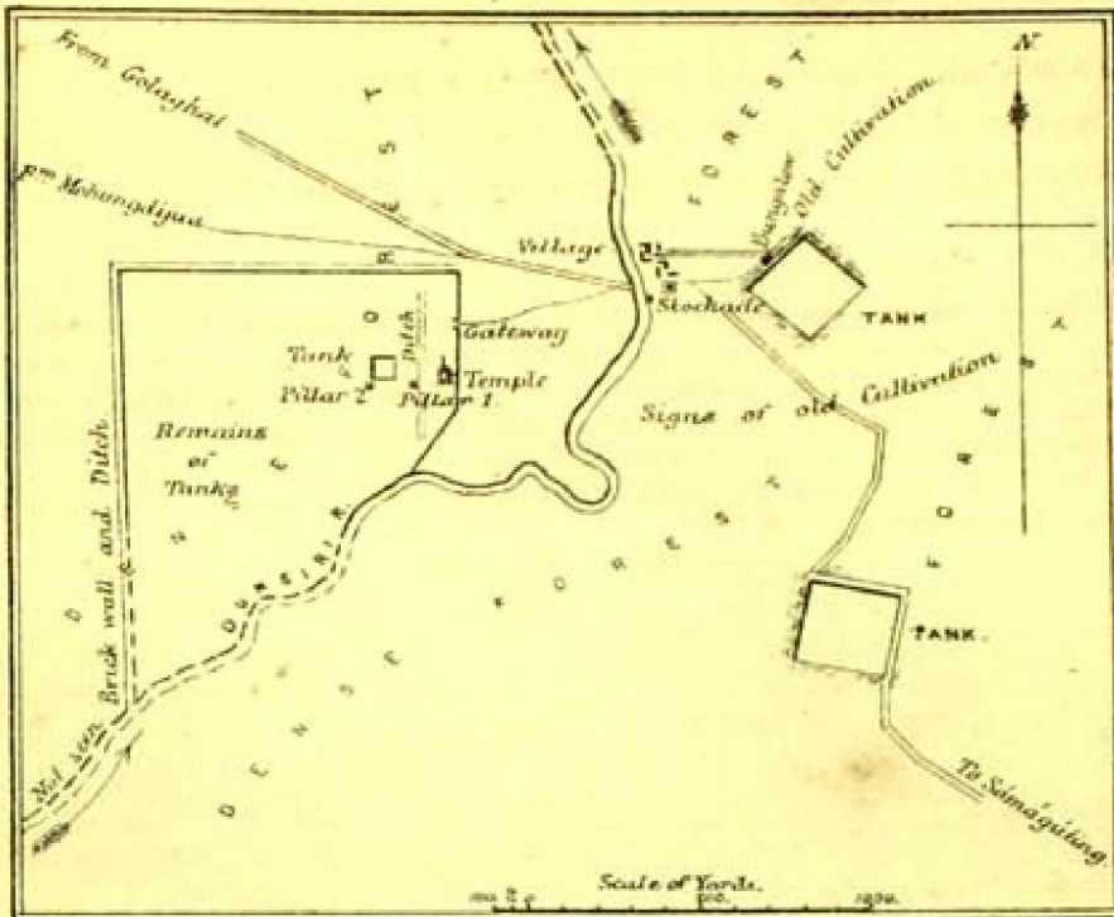
OBVERSE— يَمِينِ امِيرِ الْمُؤْمِنِينَ غِيَاثِ الدُّنْيَا وَالدِّينِ

REVERSE— مُحَمَّدُ شَاهُ بْنُ مُحَمَّدِ شَاهِ بْنِ تَغَلَقْشَاهِ السُّلْطَانِ

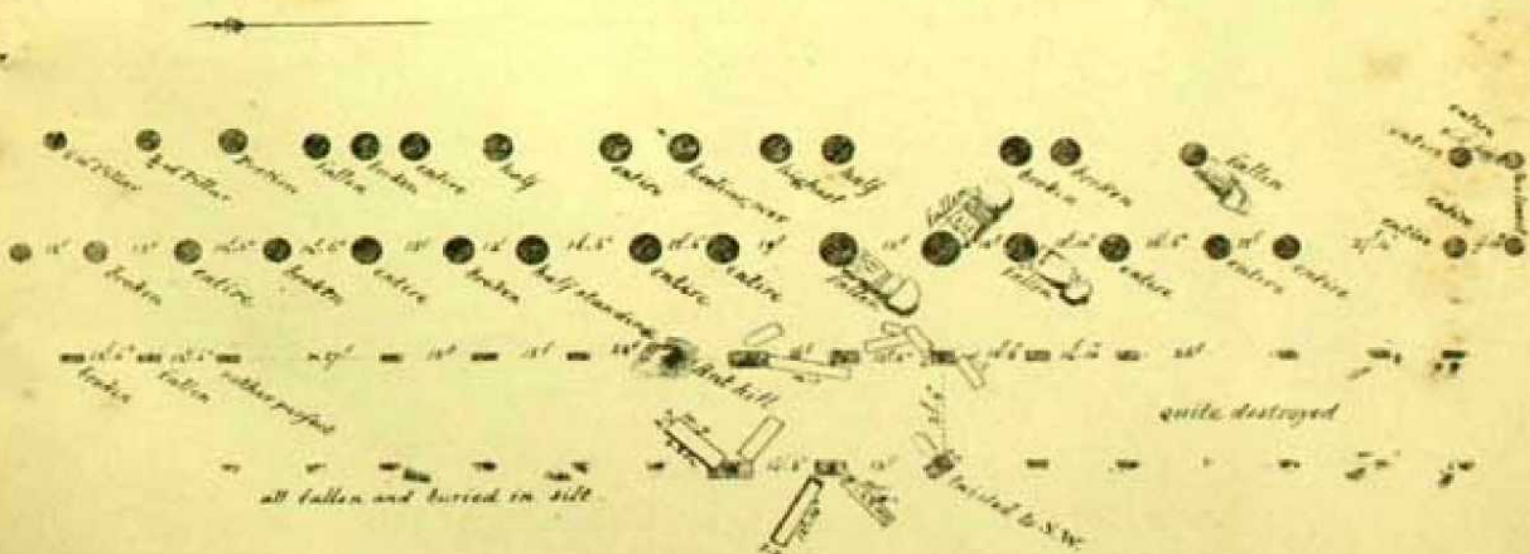
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\* When the coin was exhibited at the April Meeting of the Society, Mr. Blochmann took the date of the coin to be 754, A. H., and interpreted the issue as pointing to an unsuccessful rebellion in Dihlī during the absence of Fīrūz Shāh in Bengal; *vide* Proceedings, April, 1874. He also stated that another specimen was in the possession of General Cunningham, C. S. I., who, in 1872, had described it in one of his letters to the Society. Mr. Delmerick has now procured a third specimen, the date of which is distinctly 752 A. H. THE EDITORS.



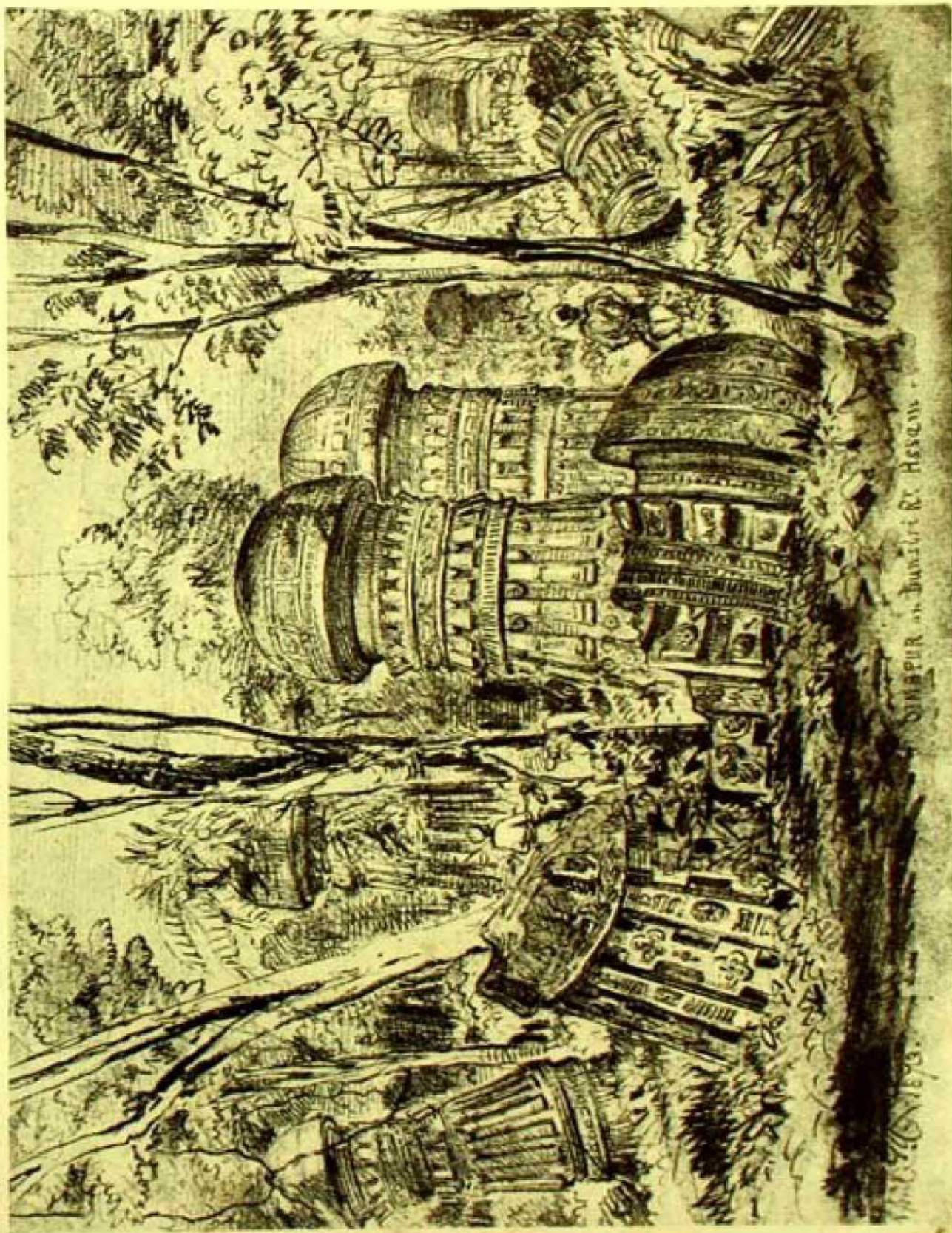


PLAN OF DIMAPUR  
on the Dunsiri River, ASSAM.



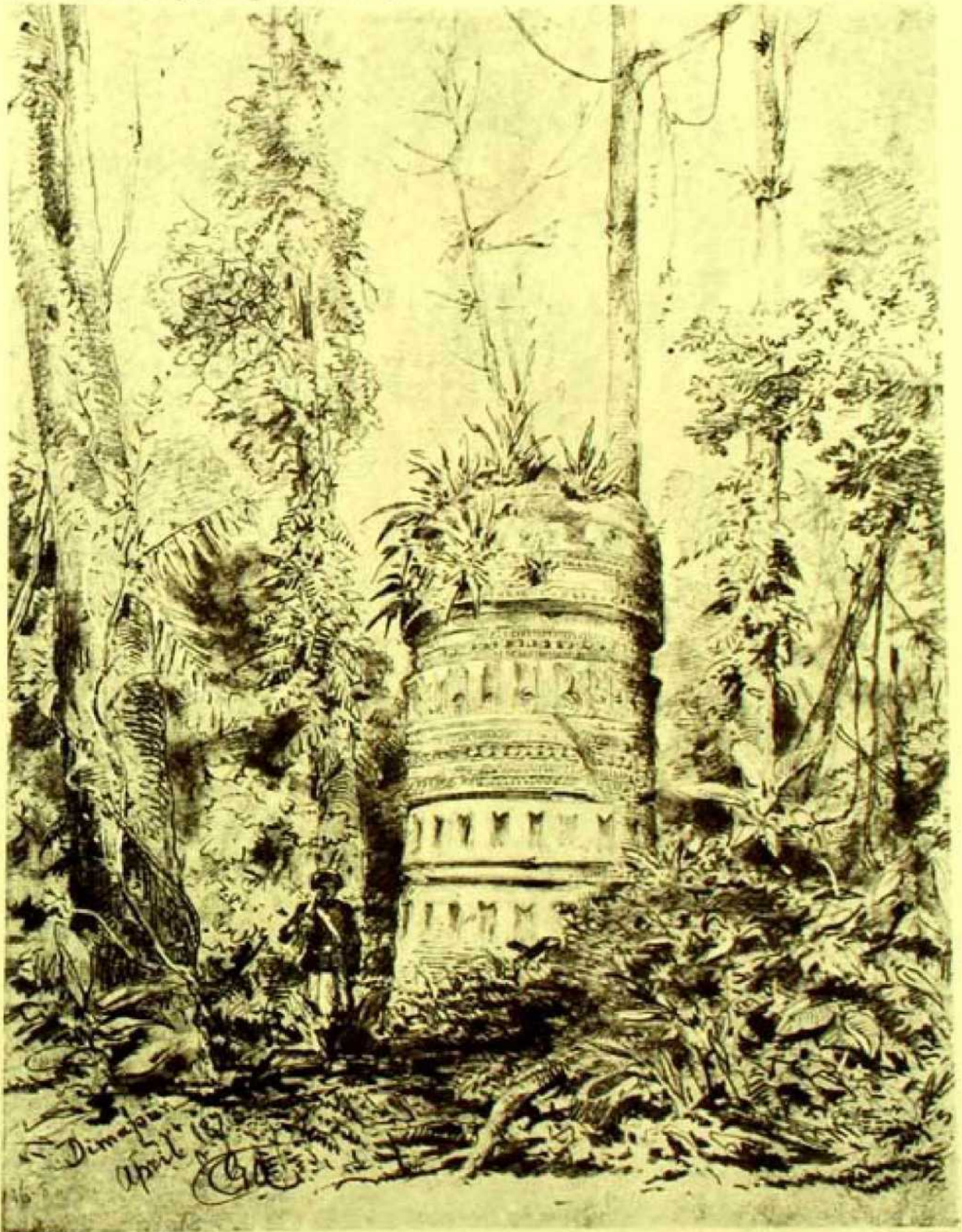
PLAN OF TEMPLE





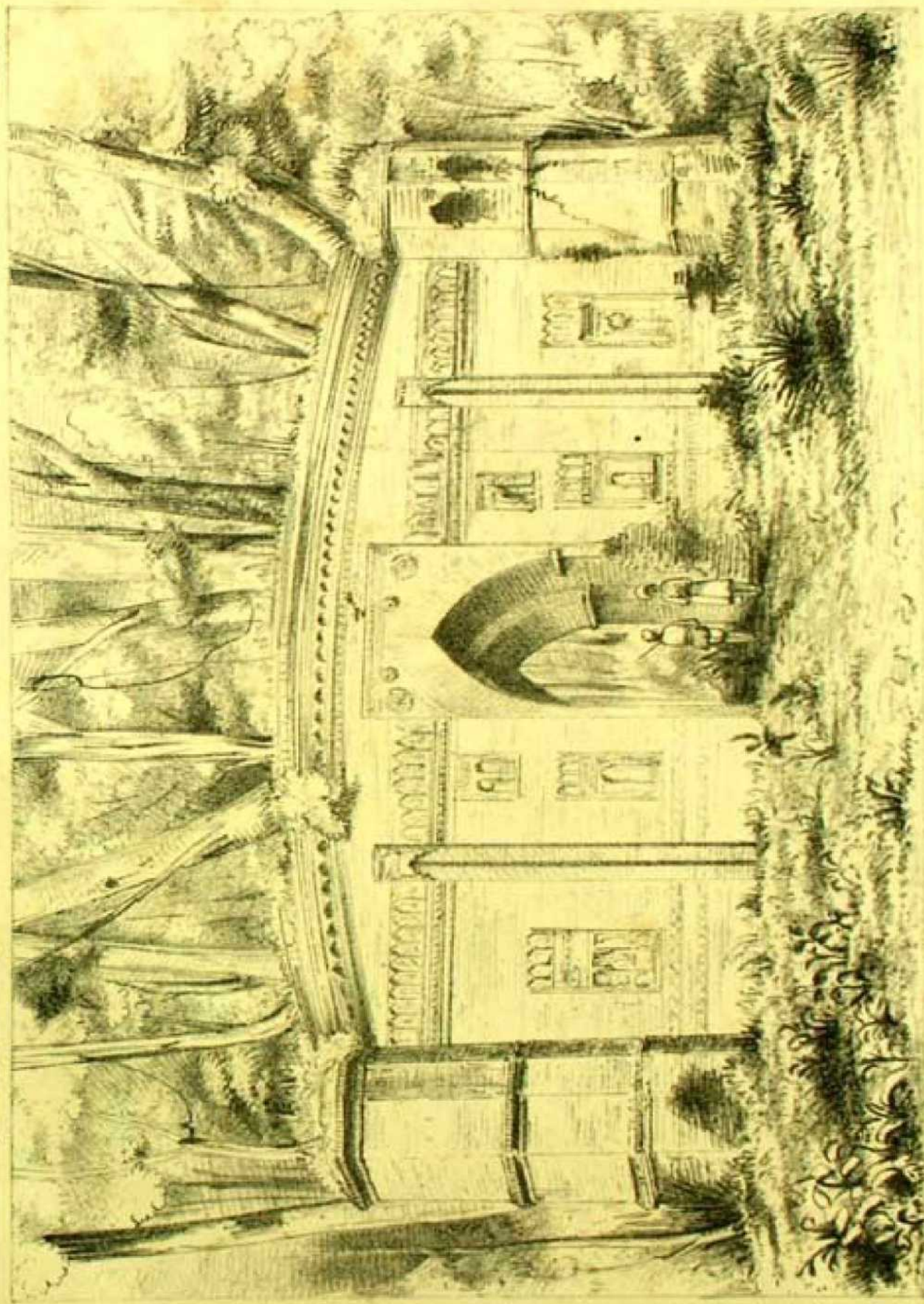
VIEW OF DIMAPUR.





VIEW OF DIMAPUR.

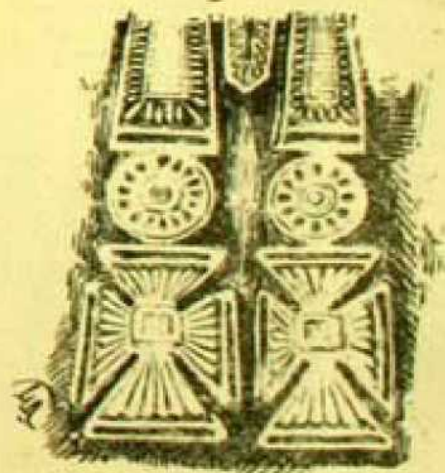
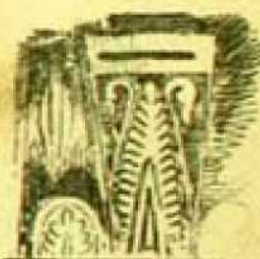
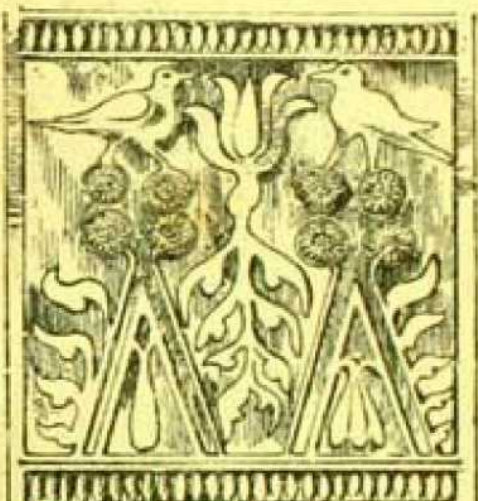
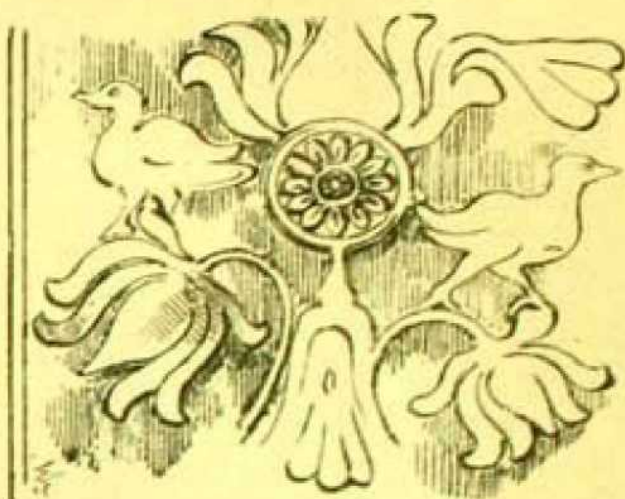




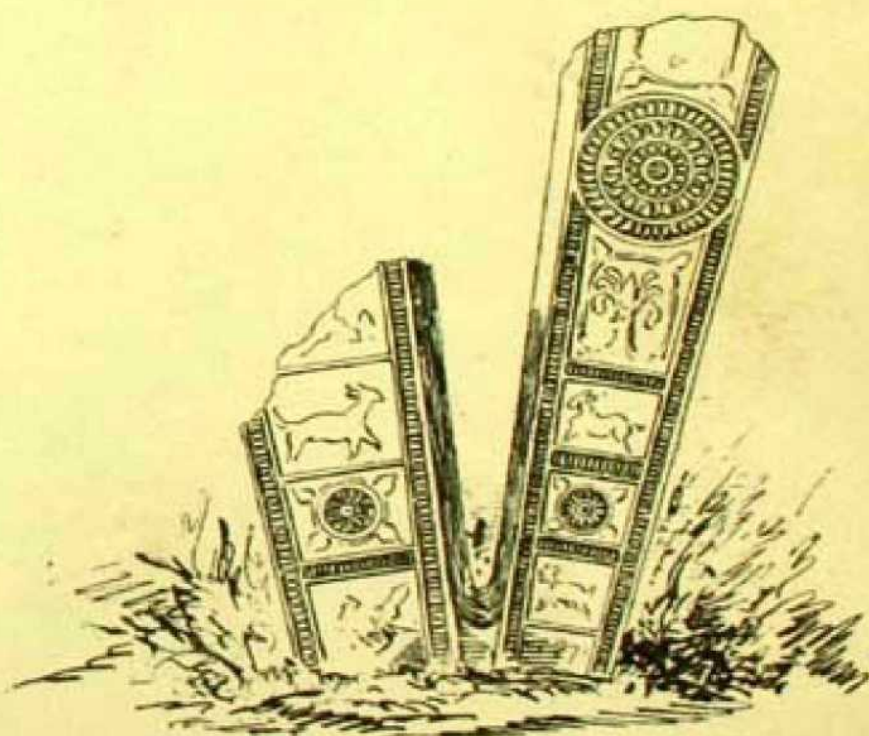
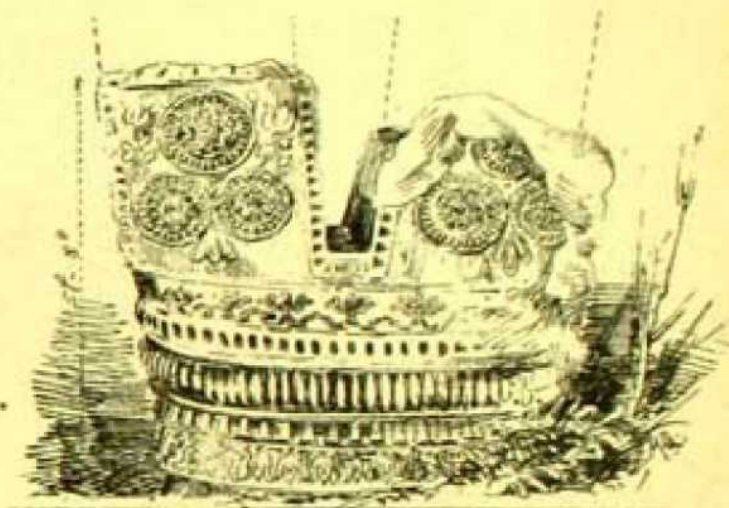
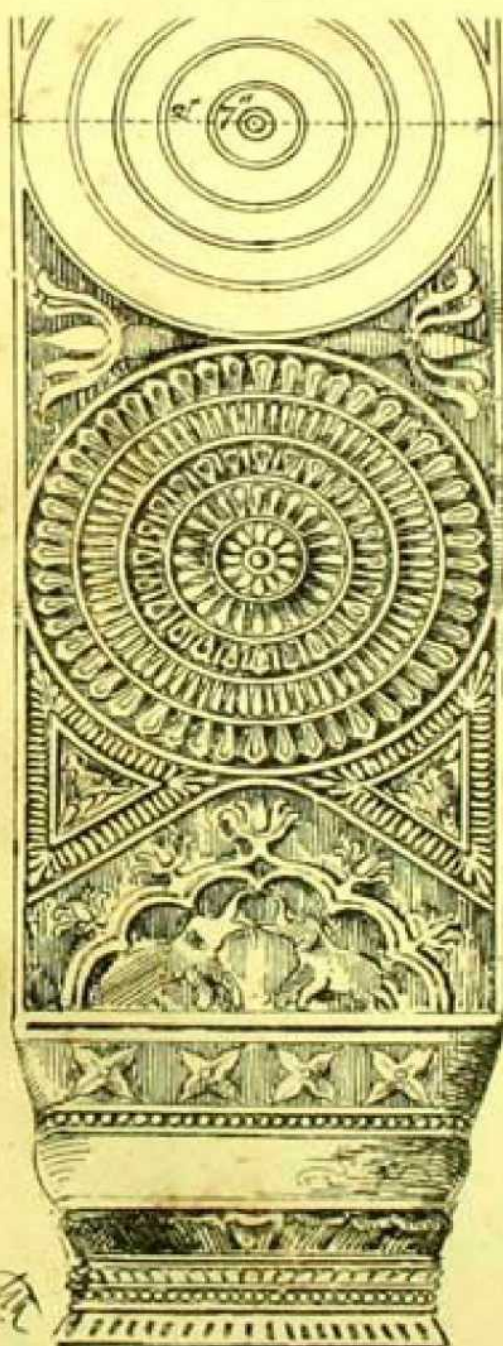
GATEWAY AT DIMAPUR.

Lithographed at the Surveyor General's Office, Calcutta, from a drawing by Major H. H. Godwin Austen.









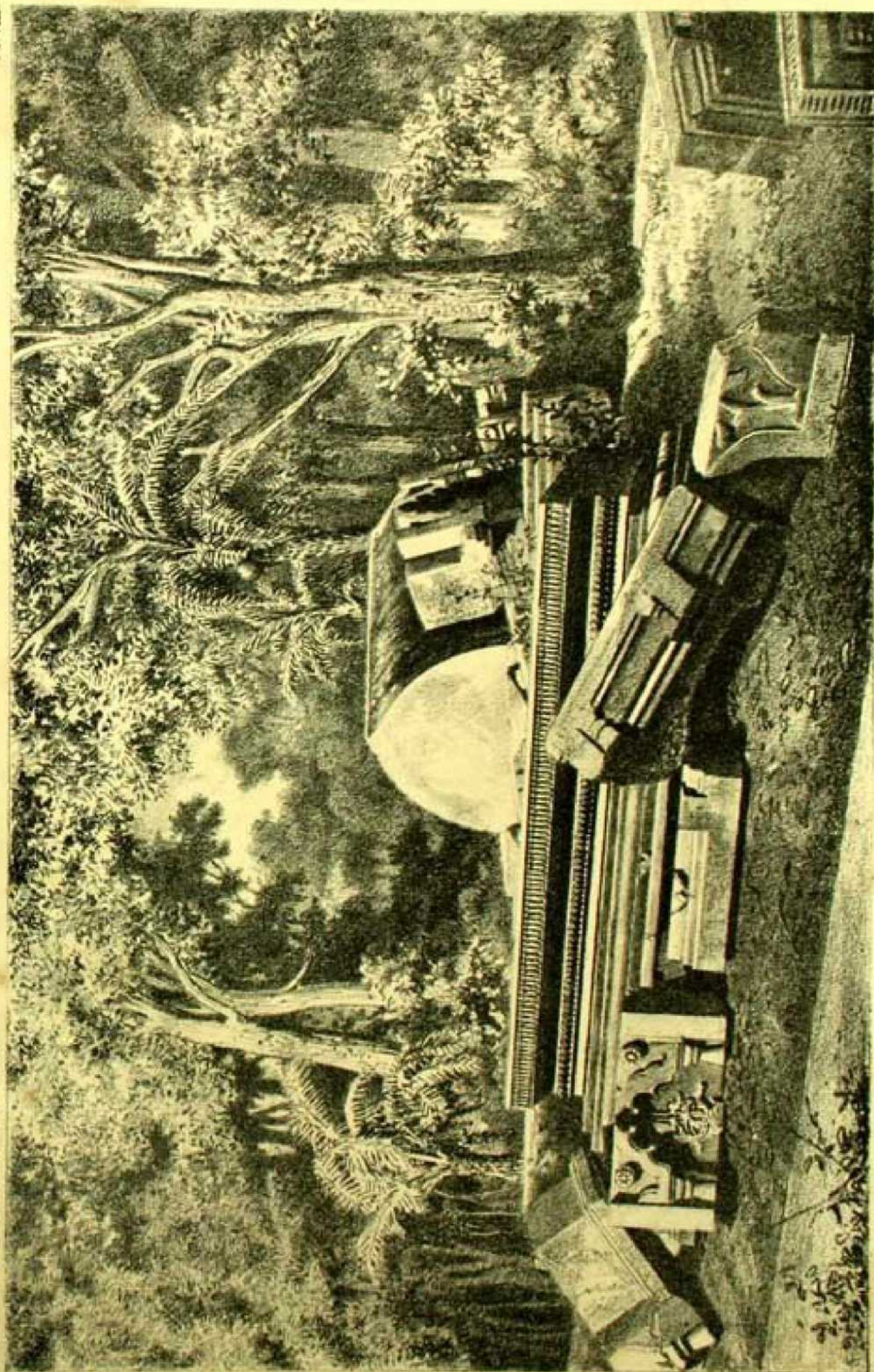


10 2 Inches = 1 Mile.

1 Mile







J. Schauburg Lith.

*Tomb of GHIYASUDDIN AZAM SHAH of Bengal*

*at Sundarganj*

*(From a photograph.)*





# JOURNAL OF THE ASIATIC SOCIETY.

Part I.—HISTORY, LITERATURE, &c.

No. II.—1874.

*Note on a hoard of 543 Sassanian Coins in the possession of Col. H. Hyde, R. E.—By THE HONORABLE E. C. BAYLEY, C. S. I.*

(With a plate.)

I enclose for the information of the Asiatic Society a tabulated analysis of a hoard of 543 Sassanian coins, which has recently been acquired by Col. Hyde, R. E., and which he has been good enough to submit to me for examination. As will be observed, it consists wholly of the coins of three kings—Khusrú I. (the celebrated Naushirwán); Hormazd IV., surnamed “Turkzádah;” and Khusrú II. Parwíz. There are 42 coins of Khusrú I., 103 of Hormazd IV., 394 of Khusrú II., besides four the legends on which are not legible, but of which two may safely be assigned to Khusrú II., and the other to one or other of the two preceding kings.

The coins of all other kings are wanting, even those of Varahrán Chobín, the usurper general who contested the succession with Khusrú II.

Whether this is accidental or not I cannot say. It possibly may be due to the calling in and recoinage of the money of his earlier predecessors by Khusrú II., whose own coinage was certainly very large.

The dates on the coins range from the 1st year of Khusrú I. to the 39th (or last) of Khusrú II., that is, from 530 or 531, A. D. to 628, A. D.

There are a few dates missing, notably the first years both of Hormazd IV. and Khusrú II.

There can, however, I think from the character of the hoard be little doubt that it was concealed immediately on the deposition of Khusrú II.



100 Hon. E. C. Bayley—*Note on a hoard of 543 Sassanian Coins.* [No. 2, and in anticipation of the troubles which eventually followed that occurrence.

It is then clear of all Muhammadan influence, and this may be a matter of some importance in respect to the marginal marks which are found on the obverse of some of the coins of Khusrú II. The only marks to be found in this hoard are all evidently expressive of the same formula, whatever that may be, which when clearly written, appears to be *𐭠𐭣𐭥𐭥*, though this is sometimes altered into *𐭠𐭣𐭥𐭥𐭥*, &c., apparently carelessly, as may be seen by the gradations in which these last two are derived from the first, which I take to be some form of the word "afzúd."

No such marks are found in any of the coins in this hoard, of earlier dates than the 11th year of Khusrú's reign. They are not found at all on the coins of some mintages, as, for example, on the mintages marked 1, 2, 8, 10, 12, 13, 14, 18, 19, in the accompanying table. I may add, however, that on another coin, dated the 20th year of Khusrú II. and with the mint mark No. 8 (*which was not found in this\* batch*), I have found another "countermark," viz.: *𐭠𐭣*.

Can this indicate that this separate coin was a mere reproduction of Khusrú II.'s type, struck after his death? for none of the large batch, which were clearly struck in his lifetime, have any other countermark than those I have described.

It is, however, to be said that the application of these marks seems to have been very capricious; for they do not appear, when adopted, to have been continuously used, and they sometimes are not found on the coins of mint cities which show them both on earlier and later dated coins, and similar coins of the same mint and year will be countermarked or plain indifferently.

As Mr. Thomas is engaged in identifying the mint cities, I have not made any attempt in this direction; and the only other remark which occurs to me is that apparently the obverses have first been struck and then the reverse, as in process of minting the symmetry of the obverse impression is very frequently destroyed.

N. B. The small figures above the dates in the accompanying table indicate the number of coins (if more than one) of the year in question; thus Khusrú I. 29<sup>2</sup> means that there are *two* coins dated in the 29th year of Khusrú I. of the same mintage.

\* It was brought from Herat by Capt. Marsh.



1874.] Hon. E. C. Bayley—*Note on a hoard of 543 Sassanian Coins.* 101

*Catalogue of Sassanian Coins, the property of Colonel Hyde, R. E., brought to India from Baghdád, and apparently constituting one find.*

Mint-mark.	King.	Date in regnal years.	Total.
No. 1*	Khusrú I. Hormazd IV. Khusrú II.	1, 3, 4, 37, 44 <sup>2</sup> , 45, 47. 2 <sup>2</sup> , 3, 4 <sup>2</sup> , 8 <sup>2</sup> , 9, 10 <sup>2</sup> . 4, 25, 26, 29, 31 <sup>2</sup> , 35, 37, 38, 39.	8 12 10 30
2	Khusrú I. Hormazd IV. Khusrú II.	7, 29 <sup>2</sup> , 38. 4, 11 <sup>2</sup> , 12 <sup>2</sup> . 29, 30, (2 illegible).	4 5 4 43
3	Khusrú II.	18, 31, (1 illegible).	3 46
4	Khusrú II.	14, 15 <sup>2</sup> , 17 <sup>2</sup> , 19, 21 <sup>2</sup> , 23, 24, 25 <sup>2</sup> , 26 <sup>2</sup> , 27 <sup>2</sup> , 28 <sup>2</sup> , 29 <sup>2</sup> , 31 <sup>2</sup> , 34, 35 <sup>2</sup> , 36 <sup>2</sup> , 37 <sup>2</sup> , 38, and 4 illegible dates.	60 106
5	Hormazd IV. Khusrú II.	3, 4, 5, 8, 9 <sup>2</sup> . 11, 27, 29 <sup>2</sup> , 32, 35 <sup>2</sup> , one illegible date.	6 9 121
6	Hormazd IV. Khusrú II.	5, 11, 12 <sup>2</sup> . 2, 5 <sup>2</sup> , 12, 14 <sup>2</sup> , 28, 29, 31 <sup>2</sup> , 33, 34, 36, 2 illegible.	5 21 147
7	Hormazd IV. Khusrú II.	8, 9, 11. 7 <sup>2</sup> , 24 <sup>2</sup> , 25 <sup>2</sup> , 27, 28 <sup>2</sup> , 29, 30 <sup>2</sup> , 32 <sup>2</sup> , 37, 5 illegible dates.	3 21 171
8	Hormazd IV. Khusrú, II.	4, 10. 15, 20, 27, 26, 28, 1 illegible.	2 6 179
9	Khusrú I. Hormazd IV. Khusrú II.	44, 49. 1. 10 <sup>2</sup> , 17, 19 <sup>2</sup> , 21, 24, 28, 31 <sup>2</sup> , 37 <sup>2</sup> .	2 1 13 195
10	Khusrú I. Hormazd IV. Khusrú II.	19, 30. 4, 7 <sup>2</sup> , 8 <sup>2</sup> , 9 <sup>2</sup> , 10 <sup>2</sup> , 11 <sup>2</sup> , 12 <sup>2</sup> , one illegible. 2, 19, 21 <sup>2</sup> , 26, 39, 35, 36 <sup>2</sup> , 38, one illegible.	2 19 11 227
11	Khusrú I. Hormazd IV. Khusrú II. One doubtful.	46. 8, 10 <sup>2</sup> , 12. 17, 26, 29, 34, 35 <sup>2</sup> , 36 <sup>2</sup> , 37, one illegible. 12.	1 4 11 1 244

\* These numbers refer to the mintmarks of the accompanying plate.





Mint-mark.	King.	Date in regnal years.	Total.
No. 12	Khusrú I. Khusrú II.	Brought forward, 45, 24 <sup>2</sup> , 25, 26, 31, 32, 37 <sup>2</sup> .	244 1 8
13	Hormazd IV. Khusrú II.	7, 8 <sup>2</sup> , 16. 4, 5, 6, 7 <sup>2</sup> , 8, 15 <sup>2</sup> , 27, 28, 35, 3 illegible.	253 4 16
14	Hormazd IV. Khusrú II.	7. 26 <sup>2</sup> , 31, 32, 35.	273 1 5
15	Khusrú I. Hormazd IV. Khusrú II.	5 <sup>2</sup> , 35, 45, 46 <sup>2</sup> . 4 <sup>2</sup> , 9 <sup>2</sup> , 10 11. 2, 5 <sup>2</sup> , 6, 11, 13, 14, 21, 24, 25, 27, 28, 31 <sup>12</sup> , 35 <sup>2</sup> , 37 <sup>2</sup> , 38 <sup>2</sup> , 7 illegible dates.	279 6 8 40
16	Khusrú I. Hormazd IV. Khusrú II.	3, 4. 8, 11, 12. 38.	333 2 3 1
17	Khusrú II.	11, 21, 29, 31, 34 <sup>2</sup> , 35 <sup>2</sup> , 37, 38, 2 dates illegible.	339 16
18	Hormazd IV. Khusrú II.	4, 11 <sup>2</sup> . 29, 31, 37 <sup>2</sup> , 1 illegible date.	355 3 5
19	Hormazd IV. Khusrú II.	4. 24, 26, 28, 31, 32, 35.	363 1 6
20	Hormazd IV. Khusrú II.	3, 4 <sup>2</sup> , 9, 10, 12 <sup>2</sup> , 13. 25 <sup>2</sup> , 27 <sup>2</sup> , 28 <sup>2</sup> , 29 <sup>2</sup> , 31 <sup>2</sup> , 32, 34, 35 <sup>2</sup> , 36 <sup>2</sup> , 37.	370 10 22
21	Khusrú I. Hormazd IV. Khusrú II.	44, 1 illegible. 4, 9, 10, 12. 3, 5, 7 <sup>2</sup> , 14, 29 <sup>2</sup> , 31 <sup>2</sup> , 35.	402 2 4 16
22	Khusrú I. Hormazd IV. Khusrú II.	47. 10. 2, 4 <sup>2</sup> , 8, 10, 23, 24, 25, 27, 30, 31, 37, 1 date illegible.	424 1 1 13
23	Khusrú I. Hormazd IV. Khusrú II.	31, 41, 1 illegible. 12. 3, 6, 21, 26, 27 <sup>2</sup> , 31 <sup>2</sup> , 35, 36, 10, one illegible.	437 3 1 13
			454





Mint-mark.	King.	Date in regnal years.	Total.
		Brought forward,	454
No. 24	Khusrú II.	11, 14.	2
25	Khusrú II.	12, 13.	2
26	Khusrú II.	28, 31.	2
27	Khusrú II.	24, 31 <sup>2</sup> , 33, one illegible date.	5
28	Khusrú I. Khusrú II.	26. 2, 9, 11, 35.	1 4
29	Khusrú II.	11, 19, 35.	3
30	Khusrú II.	9.	1
31	Khusrú I. Hormazd IV. Khusrú II.	24. 9. 29, 31.	1 1 2
32	Khusrú I.	23, 32.	2
33	Hormazd IV.	9.	1
34	Hormazd IV.	12 <sup>2</sup> .	3
35	Khusrú I.	28.	1
36	Khusrú I.	12.	1
Illegi- ble.	Khusrú I.	8, 29, 45, 47.	4
Do.	Hormazd IV.	7, 10 <sup>2</sup> , 11.	4
Do.	Khusrú II.	2, 3, 4 <sup>2</sup> , 5 <sup>2</sup> , 6 <sup>2</sup> , 7, 8, 9, 10, 11 <sup>2</sup> , 12 <sup>2</sup> , 14, 15, 18(?), 27, 36, 37.	28
Do.	Khusrú I.	1 date illegible.	1
Do.	Hormazd IV.	2 dates illegible.	2
Do.	Khusrú II.	15 dates illegible.	15
Do.	Illegible.	4, 5*, 9*.	3
		* Probably Khusrú II.	543



*Note on the Pálam Báolí Inscription.—By RA'JENDRALA'LA MITRA.*

(With a plate.)

A transcript of this record, together with an Urdú translation, has already appeared in Sayyid Ahmad's *Āsār us-Sanádīd*, or Description of the Ruins of Dihlī, and an abstract of it in English occurs in Mr. Thomas's "Chronicles of the Pathan kings of Delhi," a new translation of it would have, therefore, seemed to be uncalled for. But a transcript and translation of the record prepared for Mr. Thomas, "differed materially from the text given in the *Āsār us-Sanádīd*," and the revised documents were missing when that gentleman wrote his work in 1871. An enquiry was accordingly set on foot by General Cunningham for the original stone, but "it could not be found, and was supposed to have disappeared in the mutiny." (*Opus cit.*, p. 137.) A revised translation of the record now traced at Rohtak by Mr. J. G. Delmerick, who in March placed a rubbing of it at the disposal of the Society, will, therefore, not be unwelcome to oriental antiquarians, particularly as the names given by Mr. Thomas do not appear to have been correctly transcribed.

The object of the inscription is to record the excavation of a Báolí in the neighbourhood of Pálamba, the modern Pálam, in the Dihlī district. The name of the person who caused the Báolí to be excavated was Uḡhḡhara, and not Uṭara, as read by Bábu Rámsaran Dás for Mr. Thomas. He was a petty zamíndár or Thákur, but of good lineage, as the eulogist states that his family had a place in a genealogical work of some repute at the time. Uḡhḡhara's father came from the village of Uchhápúr near the confluence of the united streams of the Satlaj, the Biyás, and the Chanáb with the Indus.

The record is dated "Wednesday, the 13th of the wane, in the year of Vikramárka, 1333," = A. D. 1276, and was composed during the reign of Ghiyás ud-dín Balban of Dihlī, whose predecessors are indicated by their regal titles, and not by their personal names. The titles have been Sanskritised, partly with a view to take off their foreign appearance, and partly to suit the exigencies of the metres used. Thus, Shiháb ud-dín appears as Sáhabadína *साहबदीन*, Quṭb ud-dín as Khudabadína *खुदबदीन*, Shams ud-dín as Samasadína *समसदीन*, Firúz Sháh as Pherujasáhi *फेरजसाहि*, Jalál ud-dín (Raziyah) as Jaláladína *जलालदीन*, Mu'izz ud-dín as Maujadína *माजदीन*, 'Alá ud-dín as Alavadína *अलवदीन*, Náṣir ud-dín as Nasaradína *नसरदीन*, Ghiyás ud-dín as Gayásadína *गयासदीन*. Such lengthening and shortening of syllables is common enough, in the present day, in English poetry dealing with Indian proper names; but the systematic neglect of the sibilants appears unaccountable. The use of the cerebral sibilant for the guttural k in Quṭb is also remarkable.



The epithets used in connexion with these names are throughout Sanskrit. Qutb ud-dín is styled a *Bhupála*, Firúz Sháh a *Bhumipati*, Mu'izz ud-dín a *Nripa*, 'Alá ud-dín a *Nripati*, Náqir ud-dín a *Prithvindra*, and Ghiyás ud-dín a *Hammira*, a *Nripati*, and a *Sammrát*. These terms, however, have not been used as specific titles, but to indicate the persons named having been kings, with the exception of course of the word *Hammira*, which is a proper name, and is used to imply that Ghiyás ud-dín was a second Hammira in greatness. The praises of this king are sung in the loftiest strain of flattery, deposing even Vishnu from his role of the preserver of the universe to instal a Moslim in his place. In the same way, the extent of his predecessor's dominion is defined from the Ságar Island, in the Bay of Bengal, to Ghazní, and down to Cape Comorin.

The predecessors of the Paṭhāns are described to have been first Chauhāns, and before them the Tomáras. The Paṭhāns themselves are called S'akas or Scythians, and the word Musalmán or Paṭhán is nowhere used.

#### *Translation.*

*Srī.* Salutation to Gaṇapati. Om! Salutation to S'iva.

1. May He who creates, protects, and destroys this (universe)—may He who irradiates and also immerses in illusion (the minds of) men—may that Hara, who fulfils the desires of his votaries, be the destroyer of the travails of this world to you all!

2. Issuing from whose head the heavenly stream (Ganges) laves the empire in sanctity and prosperity, and, by her ever-undulating waves, serves as a chauri by his side—over whom the rays of the white-rayed (moon) form an orb, like a soothing umbrella—may that S'ankara of illimitable glory be to your welfare!

3. The land of Hariyánaka was first enjoyed by the Tomáras, and then by Chauhānas. It is now ruled by S'aka kings.

4. First came S'ahabadína, then king Khudabadína,\* then Samasadína, then Pherujasáhi became king.

5. After him Jaláladína, and then were born king Maujadína, the auspicious, and noble king Alávadína, and the lord of the earth Nasaradína.

6. He for whom the earth, from Gauḍa to Gajjana, from the country of Draviḍa to the entirety of Setubandha, all the contented provinces in the great kingdom of Saurájya,† bore vernal floral charms, produced by the rays of the innumerable precious stones and corals which

\* The first letter of the name in the original is the cerebral sibilant which for several centuries has been in the North-Western Provinces pronounced like *kh*, and by careless scribes often used for *q*.

† A homonym of Sauráshtra or Súrat, *rásht*ra and *ráj*ya having the same meaning—a kingdom.



dropped on it from the crowns of the bowed-down heads of kings who come to and fro for his service—

7. he, whose legions daily traversed the earth to both eastward at the confluence of the Ganges (Gangáságará) and westward at the confluence of the Indus with the sea—

8. he, under whose reign courtesans, proudly set off with many coloured raiments, moved about without fear, filling the air with the tinkle of their bracelets, produced by the wanton undulations of their hands—

9. he, the bewildering dust raised by the hoofs of whose cavalry marching in front of his army, overthrew his enemies in front—even he, the lord of the seven sea-girt land, S'ri Hammira Gayása-dína, the king and emperor, reigns supreme.

10. When his horses swept over a high way, the glory of the dust, produced by the pounding of the earth caused by their hoofs, enveloped the quarters and the sky, and the grandeur of the sun with his eternal rays generally so set that kings could not say whether it was day or night.

11. When he issued forth on a military expedition, the Gaudas abdicated their glory; the Andhras, through fear, besought the shelter of caves; the Keralas forsook their pleasures; the Karṇáṭas hid themselves in defiles; the Maháráshṭras gave up their places; the Gurjjaras resigned their vigour; and the Láṭas dwarfed themselves into Kiráṭas.\*

12. The earth being now supported by this sovereign, S'esha, altogether forsaking his duty of supporting the weight of the globe, has betaken himself to the great bed of Vishṇu (the ocean), and Vishṇu himself, taking Lakshmí on his breast, and relinquishing all thought of protection, sleeps in peace on the ocean of milk.

13. The metropolis of this lord of many hundreds of cities, the charming great city, called Delhi, flourishes like a crescent-headed arrow on the side of his enemies. Like the bowels of the earth, it is the store house of innumerable jewels; like the sky, a source of delight; like the nether regions, the abode of many Titanic heroes (Daityas); like Máya herself, the most bewitching.

14. In that city of Delhi, renowned under the name of Yoginípura, was born Uḍḍhara, a house-holder, wise, liberal-minded, given to meritorious acts, master of innumerable good qualities, devoid of every blemish.

15. Where the Vitastá, the Vipásá, and the S'atadru, join in front with the uprising, unbroken, and swelling waves of the factor Chandrabhágá; where stood the friendly Sindhu, with its affluents,

\* The name of the dwarf Himalayan race is written with the dental t, but the text has the cerebral letter either for the sake of alliteration with Láṭa, or for a new compound of the roots, *kri* "to scatter" and *aṭa* "to go," meaning "whose movements were scattered." The epithets used with reference to the different races, have been so selected as to alliterate with their names.



16. whose waters, when drunk, render the sweetness of honey and of sugarcane, the hydromel of heavenly nectar, even the lusciousness of knowledge, insipid,—

17. where the land is laved by the nectar of that Sindhu and is pure and pain-assuaging; where the town of Uchchhapuri reviles and laughs at Amarāvati which stands by the side of the heavenly Ganges,—

18. even there was the abode of his father Haripāla, whose father was Yasarāja. The father of the last was Dallahara, whose father was Kipu. Thus far his genealogy by the father's side.

\* The mother of Uddhara was Chandi, the daughter of Prithu, whose father was Harischandra; the father of the last was Utsahana, the son of Sahadeva, who was the son of Tola.

19. The father of Tola was Vyāghrahara, who was the son of Siṅha, and grandson of Gaura.

20. In the work entitled 'Vans'āvali' (genealogy), the two genealogies have been given in detail; here in this record the names have been taken to the extent desired to recall them to memory.

21. Like the threefold will, wisdom, and energy (the S'aktis of the Deity), his wife, with Rājasrī and Ratnadevi, was Jajalā, the eldest.

22. Her son was named Harirāja, (pure in body, speech and mind, renowned, the abode of the sixty-four accomplishments, apparently, like Vishṇu, the sole protector of the universe),

23. who had two brothers, named, Thera-rāja and Jautra, and a sister Viradā. The daughter of the second wife was the liberal-minded Dhana-vatī.

24. Her (the second wife's) two sons were Gunarāja and Bhupati. Of the youngest wife, Ratnadevi, the son was Haradevanātha, and a daughter.

25. She had also another son, Uttamarāja, and a daughter named Sadali. Thus we have here the root, stem, branches, fruits, and flowers† of this tree of desire.

26. Numerous and extensive were the alms-houses (Dharmāsālās) established by this performer of sacrifices (Adhḍhara) in different places. He, the wise, with a view to remove the exhaustion of tired travellers, caused a well to be excavated,

\* This stanza has not been numbered in the original; and the subsequent ones are numbered consecutively after the last preceding verse.

† The word as far as can be made out, reads like *Kanduvakam*, *Kunda* and *vaka* flowers. It may be also read *Kumudakam*, waterlily; in either case the name of one or more specific flowers, and not a term for flowers in general, which the context requires.



108 Rájendralála Mitra—*Note on the Pálam Báoli Inscription.* [No. 2,

27. to the east of the village of Pálamba and west of Kusumbhapura. He made the well which allays thirst and removes fainting.

28. May this well, like a lovely woman with rotund upheaving breasts, gorgeous with undulating necklaces, the assuager of the thirst of many a love-sick swain, and decorated with the seried riches of flower-tufted plants,\* be to your gratification.

29. Through its effects men, even when overpowered by many evils, are made to smile. Priding on this power of assuaging fatigue, it appeared to philosophers like Vidyā herself (divine knowledge which overcomes the tribulations of the mind).

30. May this be to the welfare of the noble Uḍḍhara Thakkura for the enjoyment of all the sweets and pleasures of this world in the company of his wives and sons and friends and dependants ;—of the person with well governed mind ;—of the faithful, for the fulfilment of his good in heaven and for his emancipation ;—of him who is devoted to the two feet of the crescent-crested (Mahádeva).

31. This eulogium is composed by Paṇḍit Jogis'vara of unbroken fame, to record the origin of this well of Uḍḍhara, the receptacle of all blessings.

In this year of Vikramárka, Samvat 1333, on the 13th of the wane, in the month of S'ravana, Wednesday. [Here follow three couplets in Rájpútáná Hindi, but so full of lacunæ as to be unintelligible.]

॥ श्रीः ॥ गणपतये नमः ॥ ॐ नमः शिवाय ॥

(१) । सृजति रचति संहरतोऽयस्मिरयति प्रतिबोधयति प्रजाः । स भवतां भवतापहरो हरो भवतु भावुकचिन्तितदायकः ॥ १ ॥ साक्षात्पुण्याभिषेकश्रियममरधुनो यस्य मूर्द्धि प्रयाता कुर्वन्ती या तरङ्गैरविरतविचलचा—

(२) । सरत्वं प्रयाति । शुभांशोरंशुमालावलयमतिमिदं चक्रायमाणं मानातीत-प्रभावो भवतु स भवतां शङ्करः शङ्करिण्युः ॥ २ ॥ अमोजि तोमरैरादौ चौराणैस्तदनन्तरं । हरियानकभूरेषा शकेन्द्रैः शास्यतेऽधुना ॥ ३ ॥ आदौ साहवदीनस्ततः परं पुडुवदीन-भूपालः ।

(३) । जातोऽप्यममदीनप्रेषजसाहिर्वभूव भूमिपतिः ॥ ४ ॥ पश्चाज्जलालदीनस्तदनन्तरमजनि मौजदीनस्तपः । श्रीमानल्लावदीनो नृपतिवरो नमरदीनश्चोन्द्रः ॥ ५ ॥ आगौडाङ्गज्जलालं द्रविडजनपदात् सेतुवन्मात् समन्तादलस्तु—

\* In the original the epithets are so employed as to apply both to the well and to woman. It is impossible to preserve the double entendres in English.



(४) । नोपपूर्णे सकलजनपदे प्राज्यमौराज्यराज्ये । यत्सेवायातयातचितिपतिमकुटो-  
द्वहनधरत्नज्वालाजालप्रवालेवदति वसुमती वन्यवामनलोत्ता ॥ ६ ॥ गङ्गासागरमङ्गलं  
प्रतिदिनं प्राच्यां प्रतीच्यामपि स्नातुं सिन्धुसमु—

(५) । द्रमद्रममद्यो यतमैन्यमाधावति । सेलान्देहितपाणिकङ्कणरत्नकारेण वारा-  
ङ्गना यान्यायानि च निर्भया यदुदयाचिवाम्बराडम्बराः ॥ ७ ॥ यत्तेनाप्रसरत्तुरङ्गम-  
खुरप्रसेपविशोभिताग्रजूनव निवारयन्ति पुरतो दू—

(६) । रेण भूरेणवः । सोऽयं सप्तममुद्रमुद्रितमहीचारावलीनायकः श्रीचम्पूरगया-  
सदीनन्दपतिस्सुखाट् समुज्ज्वलते ॥ ८ ॥ यद्वाटीवेगधावत्तुरङ्गखुरपुटापातमसूक्ष्ममानसोऽगो-  
रेणुष्ठाभिः कवलितककुभि योस्मि मच्छाद्यमाने । आदि—

(७) । त्यस्य प्रतापः स्थिरतरनिसरदोप्रिभिस्सुकमस्तं याति प्रायेण राजप्रभृतिषु गणना  
का च राजौ दिवा वा ॥ ९ ॥ यस्मिन् दिविजयप्रयाणकपरे गौडा निराडम्बरा अन्ध्रा  
रन्ध्रपरायणा भयवशाद्विज्येक्ष्यः कंरलाः । कर्णाटा अपि कन्दराययपरा भृष्टा मष्टा—

(८) । राष्ट्रजास्यक्तोर्ज्जाष्किः(कि)ल्लगुर्ज्जराः समभवन् लाटाष्किः(कि)राटा इव ॥ १० ॥  
अस्मिन् राजनि विधति चितितलं श्रेयोऽपि निःश्रेयतो भूभारं समपास्य वैष्णवमहाशय्यापदं  
संश्रितः । लक्ष्मीं वल्लसि सोऽपि विष्णुरधुना प्रक्षिप्य रक्षाविधौ चिन्तामनति—

(९) । मातृदुग्धजलधिर्विद्राव्य निद्रायते ॥ ११ ॥ अस्यानेकमहापुरीशतपते राज्ञो  
मनोहारिणी दिक्षी नाम महापुरी विजयते भक्षीव विदेपिर्णा । या शृङ्खोव विचिब-  
रत्ननिलया या द्यौरिवानन्दिनी या पातालपुरीव दैत्यनिलया मायेव—

(१०) । या मोहिनी ॥ १२ ॥ श्रीयोगिनीपुरमितिप्रथिताभिधाने दिक्षीपरे पुरपतिः  
सुल्लती बभूव । श्रीमानश्रेष्ठगुणराशिरपेतदोषा धोमानुदात्तमतिवड्ढरनामधेयः ॥ १२ ॥  
वितस्ताविपाशाशतद्रुभिराभिर्भिस्त्रित्वामला—

(११) । चन्द्रभागा विभागा । पुरस्तादुदसैस्तरङ्गैरभङ्गैः स्थिता यत्र सिन्धुः सुवन्-  
स्सुवन् ॥ १४ ॥ मुधा मधु मुधा भीधु मुधा दिवि सुधारसः । येन सिन्धुमुधा पीता तस्य  
ज्ञानमुधाप्यधः ॥ १५ ॥ तस्मिन्मुदियमुधया परिधौत—

(१२) । भूमिभारस्थले सकलतापहरे पवित्रे । उच्चैरदक्षति वसत्यमरावतीमण्डुचा-  
पुरी सुरधुनीतटवासिनी सा ॥ १६ ॥ तस्यामस्य पिताभूडरिपालललिता यमोराजः ।  
दुग्धहरस्तज्जनकः किशुरस्य पितेति—

(१३) । पिलवंशः ॥ १७ ॥ उड्ढरमाता चण्डी शृणुपुत्री शृणुपिता चरिचन्द्रः । उक्ता-  
चणोस्य जनकः सचदेवसुतस्ततोऽलसुतः । तोलपिता आग्रहरः सिंहसुतो गौरपौत्र इति  
॥ १८ ॥ वंशावलीतिप्रथिते प्रथमे वंशद—



(१४) । यं पूर्वमभाणि सम्यक् । अत्रापि तस्य स्मृतये प्रशस्तौ नामानि कामं प्रतिपादि-  
तानि ॥१८॥ इच्छाज्ञानक्रियाशक्तिकृपास्तिषोऽस्य योषितः । राजश्रिया रत्नदेव्या जाजला  
अष्टमेष्टिनी ॥२०॥ तस्याश्च पुत्रो—

(१५) । हरिराजनामा कायेन वाचा मनसा पवित्रः । प्लुतयतुःपष्टिकलानिधानं  
प्रत्यक्षविष्णुर्भुवनेकजिष्णुः ॥२१॥ अस्यानुजौ च स्थिरराजजैवसञ्ज्ञौ समं वीरडया विभा-  
तः । स्वस्वापरस्या अपि मध्यमायाः पुत्रो—

(१६) । पुराभूजनवत्युदारा ॥ २२ ॥ गुणराजभूपती अपि पुत्रौ द्वौ तदनुरत्नदेव्याश्च ।  
हरदेवो नाथ इति प्लुतः पुत्रोऽपि कन्याया ॥ २३ ॥ उत्तमराजपु(ः)त्रस्माज्जाली पुत्रि-  
केत्यपत्ये च । मूललताशाखाफलकुन्दवर्कं कल्पवित्—

(१७) । पिनोऽस्येत्वं ॥ २४ ॥ स्थाने स्थाने धर्मशाला विशाला का कानेनाकारि  
सर्वादिकर्त्ता । किन्त्वत्रापि श्रान्तपान्यग्रमार्तिच्छेत्ता वेत्ता वापिका काव्यकारि ॥ २५ ॥  
पालम्बपामपूर्वे च कुसुम्भपुरपथिमे । कृताच कृतिना वापी लब्ध्वा—

(१८) । मोक्षपट्टारिणी ॥ २६ ॥ पीनोत्तुङ्गपयोधरा परिलुठद्धारावलीविभ्रमा लब्ध्वा-  
भाम्यदनेककामुकजनक्लेशप्रशान्तिप्रदा । फुल्लमौलितरुप्रसूनपटलत्रेणिश्रियामोदिता  
वापी कापि मद्यामुदं दिशतु यः कान्तेव कान्ता—

(१९) । दृशां ॥ २७ ॥ मानसमपि हसति सतां निजप्रसादेन कल्पमिति विहृषा ।  
निजविश्रान्तिविधात्री वियेवाध्यात्मवेदिनां भाति ॥ २८ ॥ अस्तु स्वस्ति समस्तवस्तुविषया-  
भोगोपभोग्यात्मभिर्भावैः पुत्रकलत्रमिचजनतायुक्ताय युक्ता—

(२०) । त्वने । भक्तायोद्धरठकुराय महते स्वर्गापवर्गादयानन्दायेन्दुकलायतंस-  
चरणद्वन्द्वैकनिष्ठात्मने ॥ २९ ॥ अखण्डप्रकाशेन योगीश्वरेण प्रशस्तिः कृता पण्डितेन प्रशस्ता ।  
समस्ताश्रिषामेकपात्रस्य वापीनिमित्तं सुविस्तारयत्युद्धरस्य ॥ ३० ॥

(२१) । संवत्सरेऽस्मिन् वैक्रमादित्ये संवत् १९२२ श्रावणवदि १२ बुधे ॥ ठ१ किम्बु  
सदी ०००० सुदि ०००० रश्मिरोम् ०००० इरे ० ॥ पञ्चकोसद्विज्ञाम्बु-  
धधिधलं भयवेसु ॥ हेउ भांसि अठविम्मा इसरिदारंड चिहिवहडइ संभाठि  
किम्बुउ किठ ०००० संसारडमिकइ कुलेमि डंसि चलखमि ०० कुहहपं भइ  
भइ डे उम्भ दिदुमं पविउ ॥ चरपकसाग्धं नम उलि ० तभयेहे उकवखउ ॥



*Annals of 'Omán, from early times to the year 1728 A. D. From an Arabic MS. by SHEYKH SIRHA'N BIN SA'ID BIN SIRHA'N BIN MUHAMMAD, of the Benú 'Alí tribe of 'Omán, translated and annotated, by E. C. ROSS, Political Agent at Muscat.*

#### INTRODUCTORY REMARKS.\*

The Arabic work from which the following account of the History of 'Omán is translated, is entitled "Keshf-ul-Ghummeḥ," or "Dispeller of grief." That work, which forms a good sized MS. volume, is not devoted exclusively to the subject of 'Omán, but contains likewise accounts of other countries, and descriptions of various sects of Islām.

Copies of the "Keshf-ul-Ghummeḥ" are extremely rare in 'Omán; and out of that country I doubt if it is known, I have only heard of two copies existing. That from which I prepared this translation was lent to me by a gentleman residing at Maskat, a member of the Al-bú-Sa'id family. The name of the author was not inscribed on the pages, and no one at Maskat seemed able to supply the omission. At length, one of the Kádhís wrote to certain learned persons at Nezwá, who replied that the author was Sirhán-bin-Sa'id, a native of Izkí or Zikkí.

It would appear that in 'Omán it has been customary with the learned of the priests and Kádhís at times to write narratives of contemporaneous events in prose or verse, chiefly touching religious matters. Numerous records of this class are probably in existence, and from such sources it may be that the author of the "Keshf-ul-Ghummeḥ" has composed his annals of 'Omán. The first part, however, shows acquaintance with some of the standard Arabian works.

The date of the composition of the work can be approximately stated. The narrative is brought down to the year 1728, A. D., and therefore could not have been concluded at an earlier period. The abrupt manner in which it terminates, tends to show that the work was not written much later than that date. The author of the Arabic work translated by the Rev. G. P. Badger for the Hakluyt Society in 1871, occasionally quotes the "Author of the Keshf-ul-Ghemmeḥ" as making such and such a statement. I have not seen the original Arabic of Mr. Badger's author, but by a comparison of the English version with the "Keshf-ul-Ghummeḥ," I have

\* In the following, pronounce *a* as in *bat*; *e* as in *bed*; *i* as in *bid*; *o* as in *obey*; *u* as in *bull*; *á* as in *father*; *í* as *ee* in *deed*; *ó* as in *note*; *ú* as *oo* in *boot*; *ei* as *i* in *bite*; *ey* as in *they*; *ow* as in *cow*; *th* as in *both* (ث); *th* as *th* in *the* (ذ); *kh* corresponds to خ; *gh* to غ; *dh* to ض and ط; *h* to ح; *ṣ* to ص; *k* to ق; ع is represented by an inverted comma (').



been led to the conclusion that Salil-bin-Razik\* copied the majority of the earlier portion of his book *verbatim* from the "Keshf-ul-Ghummeḥ." Indeed, when, as occasionally happens, he strays from the pages of that work, the order of events is confused, and many puerilities not observable in the older work are introduced.

The work now translated may fairly be considered, as far as it goes, the most authentic and coherent account of the history of 'Omán that has emanated from native sources. But almost all native works of this sort have striking deficiencies. Trifling details are dwelt on, whilst comparatively important events are only casually alluded to or dismissed without a word. It is left as a task for European students to sift, prune, and supplement the accounts of native historians, and for this purpose no materials are to be despised.

In the original work, the divisions are similar to those adhered to in this translation; only the numbering is different. The account of the migration of Azdites and their settlement in 'Omán forms the 4th Chapter, or Book, of the "Keshf-ul-Ghummeḥ," and the rest of the history of 'Omán is found in Chapters 34 to 39 of that work. The intervening portion is on other subjects.

### Book I.<sup>1</sup>

#### *An account of the immigration of the el Azd<sup>2</sup> into 'Omán, and the expulsion therefrom of the Persians.*

It is said by el-Kelbi that the first of the el-Azd who came to 'Omán was Málik-bin Fahm<sup>3</sup>-bin Ghanim-bin Dows-bin 'Adnán-bin-'Abdullah-bin Zahrán-bin-Ka'b<sup>4</sup>-bin el-Háarith-bin Ka'b-bin 'Abdullah-bin Málik-bin Naṣr<sup>5</sup>-bin el-Azd, the Azdí, the Dowsí. Now the cause of his emigrating to 'Omán was as follows: His nephews, the sons of his brother 'Amrú-bin Fahm, were wont, when taking the flocks to pasture and returning at evening, to pass by the house of a neighbour. The latter had a bitch which used to bark at them and scatter their flocks, and one of them killed it with his spear. The man, who was under Málik's protection, complained to him, and Málik being angered, said he would no longer remain in a country where a person under his protection suffered such treatment; and went forth and separated from his brother<sup>6</sup> against the wish of the latter. Another story is, that a herdsman was set on by a savage dog belonging to a bondsman of "Dows," and slew it with his spear, on which the owner of the dog slew the herdsman. That upland is named "Nejd-el-Kelbeh."<sup>7</sup> Málik then went forth from el-Sarát with those of his tribe who bore obe-

\* The name of this person was Hamed-bin Muhammad-bin Razik, the designation "Salil" signifying "son." He died at Maskat in 1873.



dience to him. When he was well on the road, his camels yearned for their pasture grounds, and turned wistfully towards el-Sarát. But he journeyed on towards 'Omán. And he passed not any tribe of the tribes of the Arabs, of Ma'add or of 'Adnán,<sup>9</sup> but they sought his friendship, and formed alliances with him, on account of his dignity and the number of his fighting men.

He marched on until he reached Rahút,<sup>10</sup> a valley in Hadhramowt, where he halted awhile for rest. Then he learned that the Persians were in 'Omán, inhabiting it. So he drew up his forces and reviewed them, and it is said they were upwards of 6000 in number, horse and foot.

They then arranged themselves in order before proceeding onwards to 'Omán, Málík placed his son Honát,<sup>11</sup> or as some say Feráhid, in command of an advanced guard consisting of 2,000 horsemen of the bravest of his army. When they arrived at el-Shihr,<sup>12</sup> Mahrah<sup>13</sup>-bin Hidán-bin el-Háf-bin Kadhá'ah-bin Málík-bin Himyar separated from Málík, and stayed behind at el-Shihr. Málík marched onwards until he entered 'Omán with his numerous and well equipped army. He found the Persians holding 'Omán for the king Dárá, son of Dárá,<sup>14</sup> son of Bahman; and at that time they were the inhabitants of 'Omán and the dwellers therein. In those days their leader was the Marzabán,<sup>15</sup> who was Lieutenant for their king.

Málík drew aside with his followers to Kalhát<sup>16</sup> on the coast of 'Omán, as being a more secure position against the Persians. He there left the families and heavy baggage with a guard to protect them against the enemy's force, and advanced with the remainder of his army; his son Honát leading the advanced guard of 2,000 horsemen. He proceeded in this manner until he arrived at the district of el-Jowf,<sup>17</sup> where he pitched his camp on the plain. Thence he sent to the Persians asking them to allot him land in 'Omán to settle on, with water and pasture, so that he might dwell amongst them. When his messengers arrived, the Marzabán and his subordinates held an earnest and prolonged consultation which resulted in their unanimously deciding to refuse the request of Málík, so they replied: "we do not wish this Arab to settle amongst us, that our land should become straitened unto us; we have no need of his neighbourship." When their answer reached Málík, he sent a message to them, saying: "I must positively settle in a district of 'Omán; if you accord me willingly a share of the water, produce, and pasture, I shall settle in the country and praise you. If, however, you refuse, I shall remain in spite of you. If you attack me, I shall resist you, and if I prevail against you, I shall slay you, and carry off your offspring, and shall not allow one of you to remain in 'Omán." They, however, refused him permission, and prepared to make war on him. Málík on his part remained in the district of el-Jowf until his people had rested, and he prepared for the struggle with the Persians.



Meanwhile the Persians had made ready to attack him, and the Marzabán ordered the trumpets to be sounded and the drums beaten, and set out with all his host from Šohár. It is said his army numbered more than 40,000 men, and some say 30,000, and he had with him elephants. He proceeded towards el-Jowf to encounter Málik, and halted at the plain of Selút near Nezwá. When Málik received intelligence of this, he set out for the plain of Selút with 6,000 men, and encamped opposite the army of the Marzabán. They remained in their respective positions that day without fighting. Málik-bin Fahm spent the night drawing up his forces in order of battle, forming them into right and left wings, and centre, and stationing the horsemen of the el-Azd in position. He placed his son Honát in command of the right wing, gave the left to his son Feráhid, and took his station himself in the centre with chosen men. The Marzabán also was similarly employed, and both sides were prepared. Málik mounted a pie-bald charger, clad in his armour over which he wore a red robe, and on his head was his iron helmet encircled by a yellow turban. His sons and the warriors of the el-Azd were similarly accoutred in armour and helmet, their eyes only being visible.

When the ranks were formed in order of battle, Málik went around and addressed his followers troop by troop, encouraging them and exhorting them to stand firm and warning them that if they fled, they would be pursued and destroyed by the Persians.

The Marzabán then advanced with all his forces under their commanders, placing his elephants in front.

Málik met them with his followers crying out to his men of the el-Azd to charge with him, and to ply the elephants with their swords and javelins.

Thereupon he charged and his men charged with him, and they attacked the elephants with sword and spear, piercing them with darts until the elephants goaded by their weapons turned in flight, trampling under foot many of the Marzabán's men. Málik then fell on the army of the Marzabán with all his men, piercing the ranks of the Persians. The latter rallied together, and the two forces continued to fight with fury, and nothing could be heard but the clashing of their weapons. The battle was kept up the whole of that day until the fall of night separated the opposing armies, and they retired to their respective positions leaving many dead and wounded.

The next day the conflict was renewed and kept up until night, the Persians losing many of their men.

On the third day the battle was again renewed and the Persian commander having been slain by Málik in single combat, the Persian army gave way and fled, losing an immense number in killed and wounded."



The Persians then sent to Málík suing for a truce and demanding a year's time to evacuate 'Omán and return to their own country. Málík agreed to this and promised not to molest them unless they recommenced the war. The Persians thereupon returned to Šohár, and Málík withdrew to Ḳalhát.

It is said that the Persians during the period of this truce destroyed a great many water channels. Suleimán-bin Dáúd had constructed 10,000 aqueducts in 'Omán."

The Persians then wrote to Dárá-bin Dárá informing him of the advent of Málík and his followers to 'Omán, and the struggle that had occurred between him and themselves, how his general the Marzabán had been slain with many of their companions. Then telling him of their weak and helpless condition, they asked permission to return to their own country with their families. When their letter reached the king and he read it, he was incensed, and burned with a desire to avenge the slaughter of his soldiers and generals, so he sent for one of the greatest of his Marzabáns, and giving him command of 3,000 of his most renowned warriors and commanders, despatched them to the aid of his subjects in 'Omán. They proceeded first to el-Bahrein and thence to 'Omán. All this while Málík was in ignorance of what was going on.

When this reinforcement reached the Persians, they commenced preparations to renew the war as soon as the period of truce should expire.

When Málík heard of the arrival of the succours, he wrote to the Persians informing them that if they did not quit 'Omán, he would march against them and expel them by force, and seize all their property. But they, confident in their strength and in the comparative smallness of Málík's army, returned a defiant and insolent answer. Málík accordingly marched against them with his whole army and entered their territory. The Persians on their side prepared for battle. When the two armies met, Málík drew up his army as before, placing his son Honát in command of the right, and Feráhid of the left, he stationing himself with the remainder of his sons in the centre. A fierce and prolonged battle was fought, in which the Persians employed their elephants. One huge animal was killed by Honát and his brother Ma'n-bin Málík. After a fierce struggle, the Persians were routed and fled, pursued by the el-Azd horsemen, who slew an immense number and made many prisoners. The remnant of the Persian army embarked in their ships and passed across the sea to Persia. So Málík conquered all 'Omán and took all the property of the Persians. He made many of the latter prisoners and kept them a long time in prison, after which he released them, and caused them to be conveyed to the ships, with their clothing and provisions, and sent back to Persia. Málík then ruled over 'Omán and its adjacent districts, and governed it wisely and well. The



journey of Málík and his sons to 'Omán and their battle with the Persians have been celebrated in many poems and traditions from which I have only given an abridged account. Then came to 'Omán many tribes of the el-Azd. The first of the el-Azd to join Málík was 'Imrán-bin 'Amrú-bin 'Amir-Má-el-Semá with his sons el-Hajr and el-Aswad. From the two latter many tribes in 'Omán derive. Afterwards Rabí'ah-bin el-Háarith-bin-'Abdullah-bin 'Amir-el-Ghitrif went forth with his brothers, also Muládis-bin 'Amrú-bin 'Adi-bin Háarithah came and entered Hudád, also 'Armán-bin 'Amrú-bin el-Azd, then came el-Yahmad-bin Hommá, also the sons of Ghanm-bin Ghalib-bin 'Othmán; and Ziyád or el-Nadab the junior. Then Ma'walah, the sons of Shams, and el-Nadab the senior went forth, also el-Dheyyak, and some of the Benú-Yashkar and of the Benú 'Amid, and men of Khawáleh. All these tribes<sup>19</sup> went forth, each tribe with its banners. As they journeyed on, they consumed the substance of all by whom they passed, until they reached 'Omán. They extended themselves throughout 'Omán, and settled in its rich and spacious lands. The el-Azd named it 'Omán<sup>20</sup>, because their dwellings had been in a watered valley in (Yemen) which was probably called 'Ammán, and to which they likened their new home. The Persians called 'Omán by the name of Mazún.<sup>21</sup> As an Arab poet has said—

“ The Kesrá named 'Omán Mazún,  
 “ And Mazún, O friend ! is a goodly land,  
 “ A land abounding in fields and groves,  
 “ With pastures and unfailing springs.”

The tribes of the el-Azd ceased not to migrate to 'Omán, until they became numerous therein, and their power and fame increased. At length, they overran the country and extended as far as el-Bahrein and Hajar [el-Hassa]. Then came to 'Omán Sámah-bin Loweij-bin-Ghálíb<sup>22</sup>, and settled at Towwam, which is el-Jow,<sup>23</sup> in the vicinity of the el-Azd. There were also in that place some of the Benú-Sa'd, and Benú 'Abd-el-Keis. Sámah married his daughter to Asd-bin 'Imrán-bin-'Amrú.<sup>24</sup> Some of the Benú-Tamím also settled in 'Omán, the Al-Kha-zá'ah-bin Házem settlers, too, arrived from the Benú-el-Nabat, whose abodes were at 'Obrí and el-Seleyf, and Ten'am, and el-Sirr.<sup>25</sup> Some of the Benú-el-Háarith-bin Ka'b came and settled at Dhank. About one hundred persons of the Khadhá'ah also settled at Dhank. Some of the family of Benú-Rú-áheh<sup>26</sup>-bin Katí'ah-bin 'Abs came to 'Omán, amongst them Abú 'l-Hishm. The rule of Málík became strong in 'Omán and his wealth increased, and he was feared by all the tribes of the “Yemen” and “Nizar.”<sup>27</sup> He was more daring and adventurous than any other Prince. He chiefly resided on the Kálhát coast and at Yankál. One of the Princes of the el-Azd, named Málík-bin Zoheir,<sup>28</sup> settled in the vicinity of Málík-bin



Fahm, and being a chief of great renown, well nigh rivalled the latter in power. So Málík-bin Fahm fearing that mutual jealousy and strife might arise between them, demanded his daughter in marriage, and Málík-bin Zoheir gave his daughter, but stipulated that her offspring should have precedence of all Málík-bin Fahm's sons by other wives. Málík-bin Fahm assented and married her on these conditions. By this marriage he had issue Salimah-bin Málík. Málík reigned over 'Omán for seventy years, during which time neither Arab nor Persian opposed his rule. His age was 120 years.

It is said that Málík-bin Fahm was slain accidentally by his son Salimah,<sup>29</sup> in the following manner: It is said that Málík used to require his sons to keep guard at night, each in turn with a body selected from Málík's most trusty nobles and followers. Now Salimah was more beloved of his father than any of his brothers, and had higher rank and dignity assigned him. His father had taught him archery until he excelled in the art. His brothers envied him on account of the preference shown him, and sought to lower him in his father's estimation, but found no opportunity to find fault with him. At length, one day some of them approached their father, and accused Salimah of leaving his post when on watch and retiring apart to sleep. Málík, however, reproved them, and told them he knew that envy prompted them to traduce his son Salimah, and that he judged the latter by his knowledge of him, so they were forced to withdraw without gaining their object. Afterwards, however, misgiving entered Málík's mind, and he resolved to put the charges against his son Salimah to the test. He accordingly went forth in disguise and secretly, on a night when it was Salimah's turn to keep guard. Now it was Salimah's custom to withdraw from his comrades and keep watch close to his father's house. On this night he had taken his usual station; and sleep had overtaken him just at the hour his father came out. His mare seeing the form of Málík in the distance neighed, on which Salimah started from his sleep in alarm, and saw his mare with her ears erected. Now it was the habit of the mare on seeing anything approaching to point her ears in the direction of the object, and the rider would aim his arrow accordingly. So Salimah discharged his arrow between the mare's ears towards Málík not knowing it was his father. Málík heard the sound of the arrow as it left the bow, and called out, "Do not shoot, my son, I am your father." It was too late, however, and the dart pierced the centre of his heart.

Salimah, after having slain his father, fled to the Persian coast in fear of his brothers, and abode at Jashk, where he married a native of the land named el-Asfáhiyeh. His offspring by this marriage were called Benú-el-Asfáhiyeh. Salimah afterwards removed to Kermán which he made himself master of after a series of adventures,<sup>30</sup> and reigned as king until his death.



By a marriage with a Persian lady he had ten sons, named 'Abd and Himá-yeh and Sa'd and Rúábeh and Majásh and Keláb and Asd and Táher and Aswad and 'Othmán. After his death, his sons were disunited, and the Persians expelled them, and some went to 'Omán. The majority of the children of Salímah, however, remained in Kermán, where they were numerous and powerful.

The Persians did not return to 'Omán after their expulsion by Málik until his reign terminated, and his children reigned in his place, and the kingdom of 'Omán came into the possession of el-Julandá-bin el-Mustatir<sup>21</sup> el-Ma'wali, and Persia fell into the hands of the Benú Sásán.<sup>22</sup> There was peace between them and el-Julandá in 'Omán, and the Persians kept a force of 4000 warriors in 'Omán and a deputy with the kings of the el-Azd. The Persians abode on the sea coast, and the el-Azd ruled in the interior plains and hills and districts of 'Omán, the direction of affairs being entirely with them.

The Persian monarchs used to send persons who had incurred their displeasure or whom they feared to their army in 'Omán. So it continued until God caused el-Islám to be manifested.<sup>23</sup>

### Book II.<sup>1</sup>

*Account of the people of 'Omán from the period when they embraced the religion of el-Islám until they became disunited.*

There is a tradition that the first man of 'Omán to embrace el-Islám was one Mázin-bin-Ghadhúbah, who visited the Prophet and asked him to pray for him and the people of 'Omán.

Afterwards the Apostle of God wrote to the people of 'Omán, inviting them to adopt the religion of Islám. He wrote amongst others to 'Abd and Jeifar<sup>2</sup>, the sons of el-Julandá (who had died a short time before), to the effect that if they would accept el-Islám, he would confirm them as Governors; otherwise they would be deposed. He sent this letter by 'Amr-bin el-'Ás, who alighted at a place near Šohár named Damsetjerd, which had been built by the Persians. Thence he sent a message to the sons of Julandá, who were the foremost and most influential chiefs of 'Omán. The first who met the messenger was 'Abd, who was the most discerning and sensible of the two brothers. He sent on 'Amr to his brother Jeifar with the sealed letter, and Jeifar broke the seal and read it, and then passed it to 'Abd who also read it. The latter then told 'Amr that this was no trifling matter he had come about, and that he would reflect on it, and afterwards give a reply. He then assembled a council of the el-Azd, and sent to Ka'b-bin Barshah el-'Udí. They all became converts to el-Islám, and sent to all their kinsmen who vowed obedience to the Prophet, and agreed to offer the proper religious alms. Jeifar sent messengers to Maheyreh, and Shihr in the south, and to Dabá,<sup>3</sup>



and the furthest limits of 'Omán to the north; and at his invitation all the people accepted el-Islám, save the Persians who dwelt in 'Omán. When the Persians rejected el-Islám, the el-Azd assembled round Jeifar, and all agreed to expel the Persian deputy Maskán and his followers from the country. As the Persians refused either to join el-Islám or to leave the country quietly, the el-Azd attacked them, killed their leader Maskán and many more, and drove the remainder into their town of Damsetjerd, when they besieged them rigorously, until they sued for terms. The el-Azd granted them quarter on condition that they left all their gold and silver and other property behind and quitted 'Omán, which they did. 'Amr continued to reside with and direct the el-Azd, until the death of the Prophet. After that, 'Abd-bin-el-Julandá and many of the el-Azd proceeded to visit Abú-Bekr the Just, who praised the conduct of the people of 'Omán in accepting the message of the Prophet willingly and spontaneously. It is said too that 'Abd served the Khalifeh in an expedition against the Al-Jifneh. Abú-Bekr then wrote to the people of 'Omán thanking them and confirming Jeifar and 'Abd in the government. The virtues of these two cannot be fully described, but much might be written of them. They continued pre-eminent in 'Omán until they died. They were succeeded by 'Abbád-bin 'Abd-bin el-Julandá, in the time of 'Othmán-bin 'Affán and 'Alí.

Then came the wars and divisions, and Mu'áwiyah succeeded to power; but his authority was not established in 'Omán. At the period when 'Abdul-Málik-bin Marwán reigned and el-Hejjáj governed el-'Irák, Suleimán and Sa'id, the sons of 'Abbád-bin 'Abd-bin el-Julandá, ruled in 'Omán. El-Hejjáj sent several large armies against them, but they defeated them on each occasion and put them to flight until at length el-Kásim-bin Shi'wah came with a numerous army to 'Omán in ships, which anchored at one of the villages of 'Omán, named Haṭát. Suleimán-bin 'Abbád led the el-Azd against the invaders, and a battle ensued in which the troops of el-Hejjáj were routed and el-Kásim and many of his followers slain; and Suleimán captured all their property.

When this alarming news reached el-Hejjáj, he sent for Mujá'ah-bin Shi'wah, brother of el-Kásim, and ordered him to rouse the people and make a general levy of the Nizár tribes. El-Hejjáj was personally incensed and eager for revenge. He wrote to 'Abd-el-Malik-bin Marwán, and restrained the chiefs of the el-Azd of el-Baṣrah from aiding Suleimán-bin 'Abbád. I have found it stated that the army which el-Hejjáj collected and sent against 'Omán, numbered 40,000 men. One half was despatched by land and the other half by sea. The former portion of the army having marched to 'Omán was opposed by Suleimán at the head of a force of the el-Azd, consisting of 3,000 horsemen and 3,500 camel riders. The encounter took place by the water, which is within five, or some say three, days' march of



the desert country.<sup>6</sup> It is the water near the village of Búshier (it is now called el-Balka'cin). The battle which was a severe one, resulted in the defeat of el-Hejjáj's men, who fled and were pursued by Suleimán for a long distance, the latter being wholly unaware of the approach of the second army by sea, which meanwhile arrived at Búnáneh, and the commander was informed that Suleimán had gone forth with the main body of his army to oppose the force which had come by the land route, and that those who remained with his brother Sa'id were only a handful. Mujá'ah thereupon marched night and day until he reached Birkeh, where Sa'id attacked his force, and a fierce battle occurred, which lasted until night separated the combatants. Sa'id then regarding his army perceived that it was to that of the enemy like as a white spot on the body of a black bull, and many had been killed. So he retired during the night taking with him his own and his brother's children, and proceeded to the great mountain of the Benú-Riyám, which is called el-Jebel el-Akhdhar, and also Rodhwán (spelt with *dhammah*). The enemy came up with him, and they remained besieged until Suleimán came up. Mujá'ah had anchored his fleet of 300 vessels in Maskat' harbour, and Suleimán proceeded there and burned more than fifty vessels, the rest escaping seaward. He then marched against Mujá'ah's army, and Mujá'ah conceiving himself unable to cope with Suleimán sought to escape to sea, but was encountered by Suleimán at the village of Semáil. A severe conflict ensued, in which Mujá'ah was worsted and fled. He, however, succeeded in reaching his ships, and embarking sailed to Julfár.<sup>7</sup> Thence he wrote to el-Hejjáj who sent to his aid a re-inforcement of 5,000 mounted men, selected from the Bedonins of el-Shám, under 'Abd-ul-Rahmán-bin Suleimán, by land. Amongst them was a man of the tribe of el-Azd who was known by the title "el-Maláheh," and they were unaware that he was of that tribe. This person fled by night to Suleimán and Sa'id, and informed them of the approach of the fresh force; whereupon they perceived they were unable to resist longer, and taking with them their families' property and those of their tribe who chose to follow them, they reached one of the districts of the Zenj<sup>8</sup>, where they abode until their death. Mujá'ah and 'Abd-ul-Rahmán then entered 'Omán with their forces and exercised great severity, plundering the inhabitants. (We seek refuge with God from such things.) El-Hejjáj after that appointed el-Kheiyái-bin Sirah el-Mujásha'i governor of 'Omán. When 'Abdul-Malek died (A. D. 705), and el-Walíd-bin 'Abdul-Malek succeeded him, and el-Hejjáj died, Walíd appointed Yezíd-bin Abú-Muslim Governor of el-'Irák, and the latter sent Seyf-bin el-Hání-el-Hamadání to govern 'Omán.

When Walíd-bin 'Abdul-Malek died and his brother Suleimán succeeded, the latter removed all the governors who had been appointed in 'Omán, and sent Šálih-bin 'Abdul-Rahmán el-Leithí. Afterwards he saw fit



to re-instate the governors, but made them subordinate to Šālih-bin 'Abdul-Rahmán.

After that Yazíd-bin el-Muhallib became Governor of 'Irāk and Kho-rásán, and he appointed his brother Ziyád over 'Omán, and he treated its inhabitants kindly, and continued to rule until Suleimán-bin 'Abdul-Malek died, and 'Omar-bin 'Abdul-'Azíz succeeded to the government (of 'Irāk). He placed 'Adi-bin Artáh el-Fezári over el-'Irāk, who sent a governor to 'Omán who behaved so badly to the people that they wrote to 'Omán-bin 'Abdul-'Azíz. The latter placed over them 'Omar-bin 'Abdullah-bin Sabí-hah el-Ansári, who treated them well and remained Governor over 'Omán, honored by the inhabitants, and receiving their contributions voluntarily until 'Omar-bin 'Abdul-'Azíz died. Then said 'Omar-bin 'Abdullah to Ziyád-bin el-Muhallib, "this country is the land of your tribe, do as you please with it," and straightway went forth from 'Omán. Ziyád-bin el-Muhallib then governed 'Omán, until Abul-'Abbás el-Saffáh appeared, and the empire of the Benú-Omeyyeh passed to him. He appointed Abú-Ja'far el-Mansúr over el-'Irāk. The latter appointed Jenáh-bin 'Abbádah-bin Keis-bin 'Omar el-Hináí<sup>10</sup> governor of 'Omán, who was the builder of the mosque known as el-Jenáh. Afterwards he was deposed, and his son Mo-hammed-bin Jenáh appointed in his stead. Thereupon Jenáh-bin 'Abbádah sided with the Ibádhíyeh<sup>11</sup> (Ibádhis), until at length the latter acquired the sovereignty in 'Omán.

THE IMA'M EL-JULANDA'-BIN MES'U'D.—Thereupon they elected el-Ju-landá bin Mes'úd their Imám,<sup>12</sup> and he was the cause of strength to the sect, and was a just and popular ruler.

A. D. 750. At the call of el-Saffáh, Shíbán went forth against el-Julandá, who, on his reaching 'Omán, sent against him Hilál-bin 'Atiyah el-Khorásání and Yahyá-bin Najih with a force of Musalmans.<sup>13</sup> Now Yahyá was famed for his virtue; he uttered a prayer in which he mentioned both sides saying, "O God, if Thou knowest us to be in the faith Thou approvest, and to follow the truth Thou wishest us to hold, grant, that I may be the first of my comrades killed, and Shíbán the first on his side, after which cause defeat to befall his followers. If on the contrary Thou knowest that Shíbán and his followers hold the faith that pleaseth Thee, and the truth Thou wishest to be established, then cause Shíbán to fall the first."

Then the forces encountered one another, and the first who was slain on the side of the Musalmans was Yahyá-bin Najih whilst Shíbán was the first to fall on his side.

After the death of Shíbán, there came to 'Omán Kházim-bin Khozey-mah saying they had come in search of that force, namely, Shíbán and his followers, but "it suffices that God has decreed they should be slain by your hands. I wish, however, to go forth from you to the Khalifah and



"inform him you bear him obedience." El-Julandá consulted the Musal-mans as to this proposal, but they were against it. It is also said Kházim demanded the sword and seal of Shíbán, and that el-Julandá refused; on which a battle ensued between him and Kházim, in which all el-Julandá's followers were slain, and none remained alive save himself and Hilál-bin 'Atiyah el-Khorásání. Then said Hilál to el-Julandá, "You are my Imám, precede me," and I engage not to survive you." El-Julandá then advanced and fought until he fell. Hilál then rushed on clad in armour, and the enemy amazed at his valour for some time failed to recognize him, but at length they discovered who he was, and raising the cry "Hilál-bin 'Atiyah!" fell on him and slew him.

The Imámate of el-Julandá had lasted for two years and a month. It is said that it was Kházim-bin Khozeymah who caused el-Julandá to be slain. It has also been told me that at his death Kházim was congratulated by some one on his conquest of 'Omán, and that he replied, "Ye deceived me in my lifetime and do ye seek to do so at my death? Alas! how will it be for me for slaying the 'Omán Sheykh!"

I have also found it stated that a native of 'Omán went on the pilgrimage; and with him was a man from el-Basrah who rested not by night nor slept. The 'Omání asked him about this, and he replied not knowing his companion was a native of 'Omán, that he had gone with Kházim-bin Khozeymah to 'Omán and had there fought against a people, the like of whom he had never seen, and since that day sleep did not visit him. The 'Omání said to himself, "You deserve it, if you are one of those who fought against 'Omán." After el-Julandá was killed, 'Omán fell into the hands of tyrants who misgoverned the country and oppressed the inhabitants. Amongst those oppressors were the two Julandáites Mohammed-bin Záidah and Ráshid-bin Sháthán-bin el-Nadhr. In the time of those two, Ghassán-el-Henáí, of the Benú-Mahárib, plundered Nezwá, and the Benú Náfa and Benú-Hamím fled therefrom after many had been slain. This occurred in the month of Sha'bán, A. H. 145. [A. D. 762]. Thereupon the Benú-Háarith of Ibrá espoused their cause, and amongst them there was a slave belonging to Bakarah called Ziyád-bin Sa'id el-Bakari, so they agreed upon proceeding to el-'Atík for the purpose of putting to death Ghassán el-Hináí, and they met him between his house and that of Jenáh-bin Sa'd, at a place called el-Khór, as he was returning from visiting a sick person of the Benú-Hináí. He passed by unaware of their presence, and they slew him. Manázil-bin Khanbash, who resided at Nabá and was agent for Mohammed-bin-Záidah, and Ráshid-bin Sháthán the Julandáites, were angered at this proceeding: and they attacked the people of Ibrá unawares. The latter, however, repulsed them, and forty of them were slain.

God then blessed the people of 'Omán by bestowing on them love of



the Truth, and a portion of the Musalmáns rose up in defence of God's Truth, and overthrew the power of those tyrants. Insomuch as the learned Sheykh of the people of 'Omán assembled at Nezwá under the guidance of Músá-bin Abú-Jábir el-Azkání, and desired the Imámate to be conferred on Mohammed-ibn Abú-'Affán.

Now amongst those present were certain chiefs who did not favour the change; and the Sheykh Músá fearing the purpose of the Musalmáns might be frustrated and strife ensue, said, "We have elected the son of 'Abú-'Affán to govern Nezwá and the towns of el-Jowf; and I fancy he "added until war ceases."

THE IMAM MOHAMMED-BIN ABU-'AFFA'N.—And the Sheykh Abul-Manthar Bushír-bin el-Manthar remarked, "We expected to see what would please us, but we have seen what disgusts us." Músá rejoined, "We have done what you wish," but his object was to separate them, lest strife should arise. When the refractory chiefs returned to their respective districts, the Sheykh wrote letters deposing them, and sent governors to the various towns. I imagine they were deposed before the arrival of the new Governors. Mohammed-bin Abú-'Affán then remained in the camp, and behaved in such a manner as to displease the Musalmáns. It has reached me that what revolted them was his tyranny towards the Musalmáns, and his rejection of good advice. However that be, they devised a stratagem by means of which they effected his expulsion from the camp of Nezwá; after which they held a meeting and deposed Mohammed and elected another Imám. Mohammed had been Imám for two years and one month.

THE IMAM EL-WA'RITH-BIN KA'B.—Their choice fell on El-Wáarith-bin Ka'b el-Kharúsi el-Shári<sup>11</sup> el-Yahmadi el-Azdi, who became Imám in the year 177 A. H. [A. D. 783.] El-Wáarith revived the ancient virtues of the Musalmáns, and treading the paths of rectitude, honored the Truth and her followers. He repressed infidelity, and thus God vouchsafed the fall of the oppressors.

In his time, Hárún el-Rashíd sent [against 'Omán] 'Tsá-bin Ja'far-bin Abul-Manşúr with a force of 1,000 cavalry and 5,000 infantry. Dáúd-bin Yazíd el-Mahallabí wrote to the Imám Wáarith informing him of the arrival of 'Tsá with his army, whereupon the Imám sent Fáris-bin Mohammed against him. The opposing forces encountered one another at Hattá,<sup>12</sup> and 'Tsá-bin Ja'fer was defeated and forced to fly to his ships and put to sea. Abú-Hamid-bin Feleh el-Haddání el-Salúni followed him up, accompanied by 'Amrú-bin 'Omar with three ships, and succeeded in capturing 'Tsá, who was taken to Şohár and there imprisoned. The Imám consulted the Sheykh 'Alí-bin 'Azrah concerning him, and he replied: "It rests with you whether to put him to death or to spare him." The Imám refrained from putting him to death and kept him imprisoned. I have heard that a party of Mu-



salmáns, amongst whom was Yahyá-bin 'Abdul-'Azíz, set out without the knowledge of the Imám, and coming to Šohár sealed the wall of the prison and slew 'I'sá; the Imám and the Wálí being neither of them cognizant of their proceedings. They then returned to their homes the same night.

On hearing of the death of 'Tsá, Hárún resolved to send another army to 'Omán, and the people were in great fear of him. But he died ere his design was carried out, and God saved the people from the evil he had in store for them. [A. D. 809.]

It is said that Yahyá-bin 'Abdul-'Azíz was one of the most excellent of the Musalmáns; he seems indeed to have been unsurpassed by any of his contemporaries. His fame equalled that of 'Abdul Aziz-bin Suleimán. It is handed down to us that the Sheykh Bashir-bin el-Manthar was wont to say that the slayer of 'I'sá should not taste the fire. El-Wáarith continued to govern as Imám with virtue and justice, until God took him. He was drowned in a flood of the Wádí el-Nejdí (or the Wádí Kalbúh), and seventy of his followers perished with him. This event happened as follows: He seems to have formed a prison near a scammony tree, and many Musalmáns were confined there. The Wádí became flooded, and the waters flowed down in a raging torrent, when the Imám was informed that the flood would reach the prisoners. He at once ordered them to be released, but no one would venture to their rescue from fear of the torrent. Then the Imám said, "Since they are in my charge, and I shall be responsible for them at the day of Resurrection, I shall go across to them." Accordingly he made towards the prisoners, followed by a number of his attendants, but the torrent overtook them and swept all, including the prisoners, away. When the water of the Wádí dried up, the Imám's body was buried between 'Akr and Sa'ál, where his grave is well known. His Imámate had lasted for twelve years and about six months.

THE IMA'M GHASSA'N-BIN 'ABDULLAH. His successor was Ghassán-bin 'Abdullah el-Fájhi el-Yehmadí el-Azdí, who walked in the paths of the true Musalmáns, and honoring the truth and those who followed it put a check on infidelity.

In his time the "Bowárih"" used to make descents on and ravage the coasts of 'Omán. Ghassán, however, fitted out small vessels with which he attacked the pirates in reprisal, until they were obliged to discontinue their attacks on 'Omán. He was the first ruler of 'Omán, who constructed vessels and employed them in naval warfare. During his reign el-Šaḡr-bin Moham-med-bin Záidah was slain. This person was amongst the number of those who declared the allegiance of the Musalmáns due to Ráshid-bin el-Nadhr el-Julandái, and he aided them with money and arms. He was slain in the following manner: A person belonging to the Eastern districts," raised a revolt against the Musalmáns, and was joined by Benú-Hináh



and others. It was told to the Musalmáns that the brother of el-Şaḡr was with the rebels; but el-Şaḡr denied it and gave out that his brother was lying sick in his house. When, however, God caused the rebels to be put to flight, it was ascertained that el-Şaḡr's brother was with them. El-Şaḡr was, therefore, suspected of treachery in concealing the conduct of his brother. So the Imám sent a party to Semáil where he was residing. The Wálí of Semáil was Abul-Wadhdháḥ el-Şaḡr-bin Mohammed, who accompanied the Imám's messengers to el-Şaḡr, fearing on his account lest they should fall on him. The Imám had in the meantime sent a second party after him, and with them Músá-bin 'Alí. They met at Nejd-el-Sabámát. Whilst they were proceeding on their way, certain persons of their troop attacked el-Şaḡr, and killed him, Abul-Wadhdháḥ and Músá-bin 'Alí being unable to prevent them. The latter, it is indeed said, was alarmed for his own safety; and had he opened his lips, he would have been slain with el-Şaḡr. It has been recorded that the Imám Ghassán showed displeasure against those who slew el-Şaḡr.

Those were the days when the kingdom was in its prime and in the fulness of its power, and learning at its height. Such was the manner of el-Şaḡr's death, but God knows the truth. Among the executive measures of the Imám Ghassán, the following may be mentioned.

There was at Samed of Nezwá a house belonging to the Benú-Julandá, the site of which was probably in the plantation named el-'Akúdiyeh [arches]. One of the arches of this building spanned the high road, and above the arch were windows. Now the archway was dark, and was frequented by licentious and disreputable persons. It was said that a woman who happened to pass through the archway was molested by one of these bad characters, and the affair came to the knowledge of the Imám Ghassán, who ordered the owners of the house either to pull down the arch or to light it up by night, so that the persons passing should see who was there. The owners of the house, thereupon, opened out a new road for the public through their plantation, and it was used by people passing until the house was pulled down, after which the proprietors built a house across the new road, and the former highway was re-opened to the public. The remains of the arch may be seen in the southern wall of the mosque at Samed of Nezwá.

Ghassán continued to govern justly and uprightly, until he fell ill on Wednesday, the 22nd of Thul-Ḳa'deh in the year of the Hijreh 207, and died of his illness [A. D. 822]. His Imámate had lasted fifteen years, seven months, and seven days.<sup>19</sup> He was succeeded by

THE IMÁM 'ABDUL-MA'LIK-BIN HAMÍ'D, who derived from the stock of Súdah-bin 'Alí-bin 'Amr-bin 'Ámir, surnamed Mā-el-Semá, the Azdite. This Prince governed righteously and justly, and followed in the footsteps



of his virtuous predecessors. In those days 'Omán was blessed with prosperity. He was installed on Monday, the 22nd of the month of Showwál, A. H. 208. [A. D. 823]. He continued to govern justly until he became aged and infirm, when dissensions broke out amongst his soldiery. The Musalmáns thereupon consulted Músá-bin 'Alí concerning his deposition, and he advised them to assemble the soldiers and arrange for the government. Músá then assembled the troops, and proceeded to administer the Government, forbidding wrong-doing and strengthening the power of the Musalmáns. Meanwhile 'Abdul-Málik remained in his house, and they did not depose him, so he remained Imám until he died.<sup>20</sup> His reign lasted eighteen years.

**THE IMA'M EL-MUHENNA'-BIN JEIFAR.** The Musalmáns then elected El-Muhenná-bin Jeifar el-Fajhí el-Yahmadí el-Azdí, on Friday in the month of Rejeb in the year 226 A. H. [A. D. 840].

This Prince trod in the footsteps of the Musalmáns, and adhered to their principles. He was possessed of much firmness and decision of character. At his assemblies no person could presume to speak nor to interfere in favour of one litigant against another; nor would any of his attendants venture to rise so long as he was seated; neither would any person in receipt of military allowances enter unless properly armed.

One of his agents for the collection of the şadaqát (or poor rates) was a person named 'Abdullah-bin Suleimán of the Benú-Dhabbah of Manh, and he used to be sent to the grazing grounds to receive the contributions of cattle. It is related that he entered the land of Mahrah,<sup>21</sup> and went to a person of that district named Wasím-bin Ja'fer, from whom two payments were due. He, however, refused to pay more than one contribution, saying to the collector, "Take that, if you like, and if not, behold the graves of your comrades." 'Abdullah thereon held his peace and returned. He had with him a camel driver, and when he reached 'Azz, where his home was, he tarried there, and sent the camel driver on to the Imám. The man arrived whilst the Imám was holding his levée. As soon as that was over, he summoned the camel driver, and asked him about 'Abdullah and how he had fared on his journey. So he informed the Imám of the conduct of Wasím. The Imám strictly enjoined the camel man not to disclose what he had reported to any one, but to keep the matter secret. When 'Abdullah-bin Suleimán arrived, the Imám questioned him about Wasím, and 'Abdullah repeated what the camel driver had reported. Thereupon the Imám at once wrote to the Wálís of Adam, Senáo, and Ja'alán to the effect that if they could succeed in capturing Wasím of Mahrah, they were to keep him securely and send him word. The Wálí of Adam wrote to say he had taken Wasím, whereon the Imám sent to him Yahyá the Yahmaní, known as Abú-Makárish, with a body of horsemen. After them he despatched a



second detachment who came up with the first at el-Menáif; then a third, which joined at the village of 'Azz; and a fourth troop, which overtook the others at Manh. In this manner he continued despatching troop after troop, so that it might be said the prisoner was borne along on their spears, until they arrived at Nezwá with him. There the Imám ordered him to be imprisoned, and he remained a year in confinement, during which period no one dared to mention his name, nor to enquire concerning him. At length, a deputation of persons arrived from el-Mahrah, who through the el-Yahmad chiefs interceded for him with el-Muhenná, who consented to release him on one of the following conditions, from which he desired them to choose—

First,—that they should emigrate from 'Omán.

Second,—that they should agree to fight.

Third,—that they should bring the cattle every year to the camp of Nezwá, where impartial witnesses should attest that the due complement was produced and that none were withheld; also the witnesses should arbitrate concerning them at Adam. To these proposals the deputation replied in the following terms: "As for emigrating, it is impossible for us to do so; and as for war, we shall not fight against the Imám; but we are ready to bring the camels."

On this the Imám appointed the witnesses, and thenceforth they used to bring their camels, and march them round every year. I have heard say that the pillar which stands at Farḡ was erected in the time of el-Muhenná as a mark for the Benú-Mahrah, that they should assemble their camels on that spot; but God knows if this is true. And in those days el-Mogheyreh-bin Rúsin, the Julandáite, and his associates of the Benú-Julandá, and other turbulent people raised a rebellion, and went forth to Towwám where Abul-Wadhdhah was Wálí for the Imám el-Muhenná. The insurgents slew the said Wálí. Now at that time Abú-Marwán was Wálí of Şohár; and as soon as the intelligence reached the Musalmáns, he at once set out with his followers and allies, amongst whom was el-Maṭṭár el-Hindí and his followers of the el-Hind. When they reached Towwám, God caused the Benú-Julandá to be defeated and dispersed; some of them were slain, and the rest took to flight. On this el-Maṭṭár and a number of ignorant soldiers made for the houses of the Benú-Julandá and set fire to them. The cattle were tied up within the enclosure, and it is related that one of the soldiers repeatedly threw himself into the water, so as to wet his body and clothes and rushed into the midst of the fire, in order to cut the tethers and to allow the beasts to save themselves from burning. It is said from fifty to seventy buildings were burned down. I have heard it related that the women of the Benú-Julandá fled to the desert, where they remained for some time. They had with them a handmaid, whom, when they fell in want of food and drink, they sent by night to beg a supply from a neighbouring village. The girl



succeeded in obtaining some meal and a skin for holding milk and a fragment of a jar. She then filled her skin with water from the stream, and was returning to the women, when she was perceived by a soldier, who overtook her and took from her the meal which he poured on the ground, and after taking the water from her also, left her. I have found it stated that Abú-Marwán did not give the order for burning the village; it is more probable that he had forbidden such a proceeding, but that his words were disregarded. It is said that the Imám sent two messengers to the tribe whose village had been burnt, inviting them to return and promising to make them fitting compensation. The number of Abú-Marwán's forces is stated to have been 12,000. El-Muhenná remained Imám until his death, which occurred on the 16th of Rabí'-ul Ákhir, A. H. 237, [A. D. 851] he having reigned as Imám for ten years and some months and days, during which time he enjoyed the approval and support of the Musalmáns in general. Nevertheless, I find it mentioned in the biography of the Sheykh Abú-Ḳaṭṭán Khálid-bin Ḳaṭṭán that the Sheykh Mohammed-bin Mahbúb and Bashír had knowledge of the conduct of el-Muhenná incompatible with the retention of the Imámate, and consequently they secretly renounced him. God knows whether this is true.

**THE IMA'M EL-ṢALT-BIN MA'LIK.** On the day of el-Muhenná's death, the Musalmáns elected el-Ṣalt-bin Málik to be their ruler. At that time, the most excellent of the Musalmáns and their leader and guide in science and religious learning was Mohammed-bin Mahbúb. They swore allegiance to el-Ṣalt-bin Málik in the same manner that the just Imáms who preceded him had been acknowledged. He governed justly and uprightly for a long period, until all the Sheykh of the Musalmáns who had elected him had passed away. Not one of them, as far as we know, seceded from him. He lived as Imám longer than any of his predecessors, until he grew old and feeble. His infirmity, however, was only in his limbs, for we are not aware that any one asserted that his mind, hearing, or sight had become impaired.

When the scroll of Destiny announced that his time was come, and God willed to try the people of 'Omán, as He had tried those who had gone before them, Músá-bin Músá rose up against him, and pursued him until he alighted at Fark.<sup>23</sup> Thereupon the people forsook el-Ṣalt, who being too weak to retain his position was deposed from the Imámate.

**THE IMA'M RA'SHID-BIN EL-NADHR.** Músá then conferred the Imámate on Ráshid-bin el-Nadhr on Thursday, three days before the end of the month of el-Hijj, 273 A. H. [A. D. 886].

The Imámate of el-Ṣalt had lasted 35 years, 7 months, and 8 days. His death occurred on Friday night in the middle of Thul-Hijjah, 275 A. H. In his days died the most accomplished and eminent of scholars Mohammed-bin Mahbúb.



### Book III.

*From the Outbreak of Civil Dissensions to the Imámate of Sa'id-bin-'Abdullah. A. D. 886 to A. D. 934.*

There then arose dissensions in 'Omán, and much misery ensued. The people became divided in religion and counsels, and civil war and discord fell grievously upon them. Then Músá renounced Ráshid and his wickedness and error, and rising against him deposed him.

THE IMA'M 'AZZA'N-BIN TEMÍ'M. 'Azzán-bin Temím el-Kharúsi succeeded to the Imámate on Tuesday, three nights before the end of the month of Šafar, A. H. 277. [A. D. 890.] Amongst those present at the ceremony of vowing obedience were 'Omar-bin Mohammed the Kádhi, and Mohammed-bin Músá-bin 'Alí and 'Azzán-bin el-Hizabr, and Azhar-bin Mohammed-bin Suleimán.

Músá and 'Azzán continued to be mutual friends for a long time, but at length they quarrelled, and 'Azzán deposed Músá from the office of Kádhi. 'Azzán then feared what might happen to him from Músá, and hastened to send a force against him, which he raised partly from the inmates of the prisons. They proceeded to Izki,<sup>1</sup> where they entered the walled enclosure of the el-Nizár,<sup>2</sup> and set to work to slaughter, seize, carry off and plunder the inhabitants of Izki. They then set fire to the place, and burned many of the people alive. Músá-bin Músá was killed by the pebbles of Roddah near the mosque of el-Hajar in the quarter of el-Jenár. In short, they treated the people of Izki with unheard-of barbarity. The warfare thenceforward became grievous, and hatred and anger were rife; each side endeavoured by every means in its power to inflict loss on its rival. 'Azzán received those who brought the intelligence of this affair with honour, and rewarded them with largesse, and withheld his favours from such as had held back from the expedition against Izki. This affair took place on Sunday, one day before the end of Sha'bán, A. H. 278. [A. D. 891].

In consequence of this occurrence el-Fadhl-bin el-Hawári el-Koreishi-el-Nizári took the field, in order to avenge the massacre of the people of Izki. He was joined by the el-Madhariyeh,<sup>3</sup> and the el-Haddán and some of the Benul-Háarith of el-Baṭineh; and he was met by 'Abdullah el-Haddáni in the mountains of the el-Haddán.<sup>4</sup>

El Fadhl proceeded to Towám which is el-Jow.<sup>5</sup> Thence he returned to el-Haddán. He was there joined by el-Hawári-bin 'Abdullah el-Salúni, and they proceeded on the 16th of Showwál of the same year to Šohár, which they entered on the 23rd of the same month on a Friday. They attended Friday prayers,<sup>6</sup> and Zeyd-bin Suleimán officiated on the occasion, and preached to the people, after which he blessed el-Hawári-bin 'Abdullah el-Salúni from the pulpit. They remained in Šohár the rest of Friday and



Saturday; and in the evening of Sunday, they went forth to encounter el-Ahif-bin Hamhám el-Hináí, and those who accompanied him of the adherents of 'Azzán-bin Temím. For when the latter heard of their movement, he sent against them el-Ahif-bin Hamhám, chief of the Benú-Hináí with a force of the el-Yahmad, amongst them Fahm-bin Wáarith. They proceeded until they reached Majiz in el-Báţineh, and summoned el-Şalt-bin Nadhr, who came forth against them with horse and foot. El-Fadhí-bin el-Hawárí and el-Hawárí-bin 'Abdullah also came up, and a battle ensued, in which a great number of the Madhriyeh were slain, and the remainder were forced to fly. This encounter took place on Monday, four days before the end of the month of Showwál of the above mentioned year.

There continued to be strife amongst the people of 'Omán, and their mutual animosities increased in bitterness. The Imámate became to them as a thing to sport with, and an object of rebellious contention and incentive to ambitious designs. They followed not God's book nor the footsteps of their virtuous ancestors. Matters reached such a pass that in one year they set up sixteen different Imáms, and in each case failed to hold to the allegiance they had vowed.

At length, when the fulness of the time was come, Mohammed-bin Abil-Kásim and Bashír-bin el-Manther of the Benú-Sámah-bin Lawá-bin-Ghálíb went forth and proceeded to el-Bahreyn, where at that time Mohammed-bin Núr\* was governor on the part of el-Mo'tadhid.\* To him they complained, on arrival, of the sufferings they had endured from the Himyarite<sup>12</sup> faction, and invited him to accompany them to 'Omán, tempting him by holding out hopes of great advantages. The governor acquiesced, but advised them to visit the Khalifeh at Baghdád and state the circumstances to him, and that their object in coming was a desire for his success. So Mohammed-bin Abil-Kásim went on to Baghdád, whilst Bushír remained with Mohammed-bin Núr. When Mohammed was admitted to the Khalifeh's presence, he related to him the whole matter, and obtained a commission for Mohammed-bin Núr to proceed against 'Omán; after which he returned to el-Bahreyn. On his return there, Mohammed-bin Núr commenced raising a force from the various tribes, but principally from the Nizár. He was joined also by some of the tribe Ţei from el-Shám, and marched against 'Omán at the head of 25,000 men, of whom 3,500 were horsemen equipped in armour and with their baggage.

The report of Mohammed-bin Núr's approach caused great commotion in 'Omán, where the people were split up into rival factions, their counsels devoid of concert and their hearts disunited. Some there were who emigrated from 'Omán with their families and property, and others found no resource but to resign themselves to disgrace. Suleimán-bin 'Abd-el-Málik-bin-Bilál-el-Salámí with his retainers proceeded to Hormuz, and the people of



Šohár emigrated with their property and families to Šhíráz and el-Bagreh. Mohammed-bin Núr meanwhile advanced with his forces and took Júl fár, whence he proceeded to Towwám, which he reached, after some encounters had taken place in the sandy wastes, on Wednesday, six days before the end of the month el-Moharram, A. H. 280 [A. D. 893]; and conquered el-Sirr and neighbouring districts. He then advanced on Nezwá, from which place 'Azzán-bin Temím, finding himself deserted by the people, fled to Semed-el-Shán. As soon as Mohammed-bin Núr appeared, Nezwá surrendered to him, and he continued his advance on Semed-el-Shán, and encountered 'Azzán-bin Temím, and on Wednesday, five days before the end of Šafar of the same year, a severe contest occurred, which resulted in the flight of the people of 'Omán and the death of 'Azzán-bin Temím.

Thus 'Omán passed out of the hands of its inhabitants. "It was not "that God had changed His grace which was in them, but they themselves "changed the disposition in their souls by sin."<sup>14</sup> For they fought amongst themselves for power and supremacy, each one aiming at having the authority in his own hands or in the hands of those he favoured. So God delivered them into the power of one more unjust than themselves. And since they had become corrupt in their religion, therefore God deprived them of "their kingdom, and set an enemy over them to rule them. The rule of the Ibádhiyeh from their first accession to power until their overthrow by Mohammed-bin Núr had lasted one hundred and sixty-three years all but a month and twelve days. God knows the truth!

Mohammed-bin Núr sent the head of 'Azzán-bin Temím to the Khalífah at Baghdád, and returned to Nezwá, where he took up his residence. Soon after el-Ahíf-bin Hamhám el-Hináí wrote to the Sheykhs of 'Omán and the tribes of all the districts, calling on and exhorting them to rise against Mohammed-bin Núr and drive him from 'Omán. They responded to the summons, and he marched against Mohammed-bin Núr with a numerous and well ordered force. When the latter heard of this, terror seized his heart and he took to flight, and was pursued by el-Ahíf and his army. The prudent course would have been to avoid a battle, and follow leisurely until Mohammed-bin Núr should pass the frontier of 'Omán and then to return. But God so willed it for His purposes that they marched quickly and overtook him at Damma, and a severe encounter took place, in which many were killed and wounded on both sides. The contest was going against Mohammed-bin Núr and his followers who were on the point of taking to flight, and had sought safety on the sea shore. At this juncture a body of troops appeared on the scene mounted by twos on camels. These were the advance guard and others of a force of Madhariyeh sent by Abú-'Obeydeh-bin Mohammed-el-Sámí to the assistance of Mohammed-bin Núr. As soon as they had drawn nigh to the rival armies,



they alighted from their camels and seizing their weapons charged with Mohammed-bin Núr against el-Ahíf and his followers, who were exhausted by fatigue. So it happened that when on the point of gaining the victory, the people of 'Omán were put to flight, and El-Ahíf-bin Hamham and many of his relatives and others were slain, few of the people of 'Omán escaping. Mohammed-bin Núr after this returned to Nezwá, and ruled supreme over all 'Omán dividing the people and committing evil throughout the land, which together with the sons of the land he ruined by his tyranny. As soon as Mohammed-bin Núr had re-established his authority in 'Omán, he degraded the most honorable of the inhabitants and reduced them to the most abject condition. He caused people to have their hands, feet, and ears cut off, their eyes put out, and generally treated the inhabitants with the greatest severity and contempt. He also filled up the water channels, burnt the books, and 'Oman passed out of the hands of its people. Afterwards desiring to return to el-Bahreïn, he placed a person named Ahmed-bin Hilál as Governor of all 'Omán, and himself returned to el-Bahreïn. The residence of this Ahmed was at Bahlá. He also placed a Governor at Nezwá, named Beyharah, surnamed Abú-Ahmed. This person was informed one day that Abul-Hawárí and his adherents repudiated Músá-bin Músá, on hearing which he sent a soldier to Abul-Hawárí, who came to him as he was seated after morning prayer in the Mihráb<sup>12</sup> Sa'id, known by the name of Abul-Kásim (that is the mosque of el-Shejebí), reading the Korán, and informed him that Abú-Ahmed required his presence. Abul-Hawárí replied that he had nothing to do with him, and resumed his reading. The soldier remained in astonishment, not knowing what course to take with him, until a messenger came from el-Beyharah with orders not to interfere with Abul-Hawárí, whereupon the soldier returned, and Abul-Hawárí remained unmolested by the blessed influence of the sacred book. It is said the soldier related afterwards that he had summoned him to arise, fearing lest his blood should be spilt in the Mihráb.

El-Beyharah continued to be governor of Nezwá until the people rose and slew him. His corpse was dragged away and buried in a well known spot a little below the gate called Mo'thir, by the way side of the road leading to Fark, where they cast manure and ashes and other refuse. God knows the truth!

The people then gave allegiance to

THE IMA'M MOHAMMED-BIN EL-HASAN EL-KHARÚSÍ as a Shári Imám.<sup>13</sup> He soon after abdicated, and they elected

THE IMA'M EL-ŞALT-BIN EL-KA'SIM. They deposed him and declared for

THE IMA'M 'AZZA'N-BIN HAZABR EL-MA'LIKÍ, who derived from Kelb-el-Yahmad. He was also deposed and their choice fell on

THE IMA'M 'ABDULLAH-BIN MOHAMMED EL-HADDA'NÍ, known as Abú-Sa'id el-Karmatí. They deposed him also and re-elected



THE IMA'M EL-SALT-KA'SIM (RESTORED) who died in the Imámate. Next they elected

THE IMA'M EL-HASAN-BIN EL-SANTEYNI', who died in less than a month.

THE IMA'M EL-HAWA'RÍ'-BIN MATRAF. Then they elected el-Hawárí-bin Maṭraf el-Haddáni as a Dáfi'í' Imám. He set to work to repress the licentious workers of folly with great severity. But on each occasion when the Sultán came to 'Omán to tax the inhabitants, he was wont to withdraw from the house of the Imámate to his private residence, and made no attempt to prevent his committing injustice and tyranny. As soon as the Sultán had quitted 'Omán, he would return to the house of the Imámate, and placing the crown of office on his head, would say to those around him : " There is no Government but belongs to God, and no obedience is due to those who rebel against God." Up to the time of his death, some of the Benú-Asámeh remained in attendance on him by order of the Sultán. The Sultán here mentioned was the Sultán of Baghdád.<sup>13</sup> God knows the truth! On his death, they elected his nephew 'Omar-bin Mohammed-bin Maṭraf.

THE IMA'M 'OMAR-BIN MOHAMMED. This Prince adhered to the same policy as his uncle had adopted, retiring when the Sultán came and returning to office on the latter's departure. At this period the Karámiteh<sup>14</sup> invaded 'Omán, on which 'Omar resigned the Imámate. When the Karámiteh returned to Bahreyn, he did not resume office.

These Karámiteh had overrun many countries including Mekkah and el-Shám and subdued the various tribes. They were styled Benú-Abí-Sa'íd-el-Hasan-ibn Bahrám-bin Bohrist-el-Heyyání.<sup>15</sup> Abú-Sa'íd abolished prayer, the fast, pilgrimage, and religious alms, and turned these observances into allegory. He so deluded his weak-minded followers, that they deified him in the place of the Almighty. He was at length overthrown by 'Abdullah-bin-'Alí, who fought against him with only 400 men, notwithstanding that their armies were numerous. He continued to strive with them for seven years, until they were deprived of power.

INTERREGNUM. After this there was an interregnum in 'Omán, during which period no Imám was elected.

THE IMA'M MOHAMMED-BIN YEZÍ'D. At length, they elected to the Imámate Mohammed-bin Yezíd el-Kundi [or Kindí], whose residence was at Samed-el-Kundi. He was elected as a Dáfi'í' Imám, being incapacitated from election as Shárí on account of being in debt.<sup>16</sup> At this time the Sultán subdued 'Omán, and placed two forces in occupation of it, one at el-Sirr, and the other at el-'Atik. Thereupon Mohammed-bin Yezíd fled from 'Omán, and el-Hakam-bin el-Mullá el-Bohri, a resident of Sa'ál, was elected Imám.

THE IMA'M EL-HAKAM-BIN EL-MULLA'. We know not of any previous



Imám, whether Musalmán or sinner, who equalled el-Hakam-bin el-Mullá in weakness and imbecility. He soon abdicated, and the Sultán placed an army at Nezwa. God knows the truth!

My own opinion is, that none of the Imáms mentioned after el-Şalt-bin Málik were universally recognised by the people of 'Omán, and that their rule did not extend over the entire country. They were recognised in certain districts and not in others, by some of the tribes only, and not by all. For after the dissensions which had arisen amongst them, the people of 'Omán had ceased to act in unison, and could not agree in the choice of an Imám. As they had cast away the blessings bestowed on them by God, so their hearts became disunited.

#### Book IV.

*Containing an Account of the Imáms Sa'id-bin 'Abdullah and Ráshid-bin-el-Walíd and their successors to the time of 'Omar-bin el-Kásim-el-Fadheyli. A.D. 934 to A.D. 1560.*

The next of the Imáms appointed in 'Omán, after the people had come to be divided into factions, was Abul-Kásim Sa'id-bin 'Abdullah-bin Mohammed-bin Mahbúb-bin el-Rabeyl-bin Seyf-bin Hubeyrah, the horseman of the Prophet (on whom be peace!). I know not the date of his election, nor how long he was Imám; neither have I learnt by whom he was slain, and for what cause. I have perused many books and questioned many well-informed persons in search of information on these subjects, but in vain. Please God, however, I shall still endeavour to discover.

I find that the first person to declare Sa'id-bin 'Abdullah Imám was Abú-Mohammed el-Hawári-bin 'Othmán, then Abú-Mohammed 'Abdullah-bin Mohammed-bin Abil-Múathir. Next I reckon Mohammed-bin Záideh el-Símúli. I find also that this Imám was elected as a Dáfi', not as a Shári.<sup>2</sup> Abú-Mohammed 'Abdullah-bin Mohammed was wont to extol his learning and to assert that his attainments surpassed those of any previous Imám. It has also come down to us that Abú-'Abdullah Mohammed-bin Rúh said that the Imám Sa'id-bin 'Abdullah was more learned than any of those who elected him and associated with him. It is known to us from the unanimous testimony of the select circle of those who profess the true Faith,<sup>3</sup> that he was recognised as our Ruler and Imám. He passed away. May God have mercy on his soul! We know not that any found fault with his election to the Imámate, nor with his character; neither did any secede from him. We learn moreover of Abú-Mohammed 'Abdullah-bin Mohammed-bin Abil-Múathir that he said: "We know of no Imám of the Musalmáns in 'Omán more excellent than Sa'id-bin 'Abdullah, for he was "an upright and learned Imám, and he died the death of a martyr. All



"these things were combined in him. May God have mercy on him!" It may be, however, that el-Julandá-bin Mes'úd was his equal; but we are told that the Sheykh Abú-Ibráhím Mohammed-bin Sa'id-bin Abú-Bekr said—"The Imám Sa'id-bin 'Abdullah was superior to Julandá-bin Mes'úd; for "he was a just and righteous Imám, excelling the people of his time in "learning, and he died a martyr withal. May God pardon him and "compensate us and el-Islám for his loss with the highest requital, where- "with He compensates a people for their Imám!" This is what I have found recorded of his excellence. I find the date of the affair in which he was killed stated to have been the year 323 A. H. [A. D. 934]. I have read a book in which it is stated that he met his death in the following manner. A woman of the people of el-Ghashb of el-Rosták was drying grain in the sun, when a sheep came and ate some of it, on seeing which the woman cast a stone and broke the sheep's leg. Another woman who owned the sheep, then came up and began beating the first woman, who cried to her people to aid her. One of her friends came up and also one of the other woman's friends, and each side being augmented by fresh arrivals a severe contest commenced. The Imám Sa'id-bin 'Abdullah repaired to the scene with a single attendant for the purpose of separating the combatants, and was killed in the mêlée. God knows the truth of this.

THE IMÁM RA'SHID-BIN EL-WALÍD. The next Imám was Ráshid-bin-el-Walíd, who was elected in the following manner: There assembled together the Sheykh Abú-Mohammed 'Abdullah-bin Mohammed-bin Abul-Múathir and Abú-Mes'úd el-Na'mán-bin 'Abdul-Hamíd, and Abú-Mohammed 'Abdullah-bin Mohammed-bin Shíkheh. And amongst those present at the ceremony were Abú-'Othmán Ramshakí-bin Ráshid and Abú-Mohammed 'Abdullah-bin Mohammed-bin Šálih and Abú-Manthir-bin Abú-Mohammed-bin Rúh. These persons who assembled on this occasion were respected and distinguished in the same degree as were those who elected the Imám Sa'id-bin 'Abdullah in their time. No persons of sense denied their excellence nor ignored their uprightness, and of their contemporaries in the same Faith none were comparable to them. Thus "there are men for every time, as there is a word for every occasion." People of every age desire the general welfare of their religion. This is proverbial. The authority was with those who were present and not with the absent. Those who bore witness could not alter, and those who did not could not demur. He who gave admittance could not expel, nor could the affirmer deny his word.

Now it was known to this assembly that there was an adversity of sentiment amongst the members, and that mutual recrimination had place with regard to the affair of Músá-bin Músá, and Ráshid-bin el-Nadhr. Wherefore, when they had resolved to elect Ráshid-bin el-Walíd Imám, they deemed it expedient to summon a general council, to come to an



agreement as to the course to be adopted in that matter. Accordingly, a great number of the elect of the true Faith assembled in the house at Nerwā, in which Rāshid-bin el-Walid used to reside. All of those we have named as having been present at the election of Rāshid-bin el-Walid attended except Abū-Mes'ūd-el-Na'mān, who was absent. The President of the Council was Abū-Mohammed 'Abdullah-bin Mohammed-bin Abul-Múathir. They unanimously resolved to adopt a policy of neutrality as between Mūsā-bin Mūsā and Rāshid-bin el-Nadhr, and to hold aloof from both as regarded the Government, granting at the same time that both were sincere believers in their religion. We know not of any of them that he acted wrongfully in either of these courses. The matter, then, was settled amongst them in this fashion; although the wording as to details may be more or less incomplete, still, the general result was as stated.\* Having agreed on this course, they thereupon proceeded to swear allegiance to the Imām Rāshid-bin el-Walid, binding him to administer the duties of his office in obedience to God and his Apostle; to govern uprightly and repress crime; to prosecute wars in defence of the Faith as a Dā'ī Imām; and further to tread in the footsteps of the just Imāms, his predecessors, in imitation of their virtue and uprightness. On such conditions did Abū-Mohammed-bin Abil-Múathir swear fealty in the house at Nerwā, and after him, in the same manner, Abū-Mes'ūd and the rest of the assembly. The Imām having accepted their vows, they went forth to the open plain at Nerwā, where a vast concourse of the people of 'Omān had collected. They had come not only from Nerwā, but from the various towns of the East and the West of 'Omān, and the assemblage was composed of persons of unimpeachable integrity, holding positions of rank and authority. They all assented to and obeyed the decision of the Council without the slightest sign of repugnance or disapproval. Then arose Abū-Mohammed 'Abdullah-bin Mohammed-bin Shikbeh, and approaching Rāshid hailed him as Imām, and announced to the people that the Council had elected him, commanding them to vow their allegiance. This they did openly and willingly without a dissentient voice. Some of the persons referred to made their vows separately, and in other cases in parties; and for some time people kept arriving for the purpose of making the compact, until the whole kingdom had declared for the new Imām. Some appeared in person to swear allegiance, others saluted him as Imām,\* whilst others again proved their minds by exhibiting a ready submission. The Imām had no occasion to use force, as no secret disaffection existed. He sent his governors and agents to all the districts and villages, and no one molested them. He performed the Friday service at Nerwā, and he and his agents collected the *ṣadaqāt*\*, or poor-rate. He also reviewed the troops, presenting standards and issuing all necessary orders. His receipts on account of the revenues of the kingdom were large,



and every district of 'Omán acknowledged his authority as Sultán,' and none rebelled against it in those days. All paid what was his due and openly acknowledged him as Imám, without the exercise on his part of any severity, open or secret, or any form of intimidation. On the other hand, there was no display of weak leniency, nor undue conciliation; nor was it necessary for him to work on the sordid feelings and hopes of profit of those who dissemble their fears, and betray others for gain or ambition. He was gentle to his subjects, and acted in harmony with their opinions, kindly indulgent to their defects and faults and pleased with their virtues. He was impartial in his judgment between all classes, whether noble, religious, poor, or rich. Those at a distance received equal consideration with those present. All were received with hospitality, and assiduous attention given to their affairs. He was accustomed also to consult with those below him in rank and to avail himself of their advice. Thus he continued to take on himself the burden of the cases of his subjects, sacrificing his own enjoyments and the society of those he loved for their good; and he ceased not in the same manner to bear patiently the misfortunes and deprivation of enjoyment and separation from friends, which his subjects caused him to suffer. He had to endure slander and injury,\* calamity, and indignity, and bore all with patience, trusting to God for better times. Many of his subjects were watching for an opportunity to injure him, and in secret entertained most evil designs against him. "Iniquity appears in the countenances of the unbelievers, and their breasts hide not hatred and envy." The Evil one had gained the mastery over their minds, and an evil fate and their own animosities overcame them. Some amongst them, whilst seeking his ruin, pretended friendship outwardly. If God gave him success, they feigned to rejoice and congratulate him. If, however, success attended the enemy, they would abandon him on pretence of inability to assist, asserting that if they only had the power, they would fight against the enemies of the Truth. Many proffered aid in words, whilst in secret abandoning his cause. Others again assisted him from interested motives, but only nominally and without sincerity. If good befel, they took advantage of it, but in time of adversity turned their backs. In short, it is impossible to enumerate the various evil motives by which they were actuated. Exception may be made in the case of a few persons who had not power to assist him, who saw they could not mend a hopeless cause by remaining faithful.

At length his affairs reached such a point that his people opposed and abandoned him, and the nobles conspired together to enter into intrigues against his power with the Sultán whom they prepared to support. The Imám made strong attempts to prevent this, and fierce enmity ensued between him and his subjects, who separated from him at the town of Bahlá,



and went forth obstinately in open rebellion, resolved on his downfall. The Sultán meanwhile had been advancing to el-Sirr, whilst the Imám, being deserted by the main body of his army who were now opposed to him, had only a small and weak body of followers. He had only left Nezwá indeed in hopes of inducing them to abandon their intention of going forth to join the approaching foe. Finding himself deserted and rebelled against, and unable with his small party to oppose the Sultán, he feared to be surprised in the place, and withdrew with his followers from Bahlá to Kadam.<sup>10</sup> He hoped that by this step he had ensured his safety and kept on his guard. He remained at Kadam until he ascertained that the enemy had entered el-Jowf, when he became alarmed, and removed with a small party of attendants to Wádi el-Nakhr.<sup>11</sup>

He then busied himself actively in endeavouring to raise a force to oppose the Sultán, and at length succeeded in assembling a sufficient number of allies and adherents to commence active operations against the enemy. By this time the Sultán was encamped at Nezwá. By the advice of those present of his kinsmen and well-wishers, who thought it best in the interests of Islám, the Imám remained behind the army which he sent against the tyrant Sultán at Nezwá. He took his position close to the pass to Manh, so he was not distant from them. As God had ordained, his army was defeated and put to flight and dispersed, and the Imám went forth vanquished and panic-stricken, seeking safety from his pursuers. The battle occurred in the forenoon, and by evening he found himself abandoned by all his followers, a prey to terror and deprived of all hope of the success of his people.

The tyrant Sultán then reduced all 'Omán with its various districts to submission. The people sought to ingratiate themselves with the Sultán, who, on his part, deluded and beguiled them, until all the districts had submitted to his rule. Meanwhile the Imám lay concealed amongst the heights of the mountains and in desert places, in fear alike from the Sultán and from his own subjects, dreading to meet death at every place, and in terror of being surprised in his sleep. Whilst he was thus a fugitive from home and family in terror of his life, the people of his kingdom were dwelling in their houses in peace and security, having artfully conciliated the Sultán and ingratiated themselves with him. There was nothing to induce the Imám to withhold his submission; indeed there was no other course open to him but submission, as no further effort was possible. He deliberated concerning his position and consulted with persons of sound judgment. He acted in accordance with the decisions and sanctions of people of piety, who pronounced an opinion, which, as far as we know is incontrovertible, that a Dáfi'í Imám is justified in practising "religious dissimulation"<sup>12</sup> when abandoned by his subjects. And we know not of a more signal



instance of desertion and rebellion on the part of the subjects against their Sovereign. But God is merciful and beneficent, and He provides for His servants an escape from every difficulty in matters of religion, and grants an excuse for all who are helpless. The Imám and his people alike suffered in accordance with the decrees of Fate. He accordingly returned to his home and made his submission, hoping to remain in unmolested retirement. A messenger came to him from the Sultán with an assurance of safety, but he seems to have given the promise verbally and not on oath. The Imám abstained from frequenting the Sultán's levées until the latter came to him and forcibly insisted on his doing so. By this act of submission his Imám-ate, in our opinion, terminated forthwith; and this furnished an evident excuse for the establishment of the rule of his rival. We have not heard that, during his administration of the Imámate and the vicissitudes which befel, any reproach or blame attached to Ráshid-bin el-Walíd. He lived for a short time after these events, admired by all, and was much regretted when he died. In his time, Ráshid-bin el-Walíd was humble in spirit, and none of the pious found fault with him on account of any of his actions. May God requite el-Islám and its people for the loss of one who acted justly and uprightly! and may He recompense us all and all who knew his excellence, as a people is recompensed for their Imám, a brother for a brother!

We have recounted only a portion of the virtues of Ráshid-bin el-Walíd, which we trust will not be questioned, but much more might have been added on this subject. For he was endowed with every virtue, so much so in fact, that his good qualities are proverbial, and such as to baffle all attempts to recount them. His fall dated from the battle of Nezwá, after which, deserted by his own subjects, he was obliged to dissimulate and seek the favour of the Sultán; for there was no refuge for him from the confines of Julfár to the borders of Ra'wán; neither in the hills of 'Atáleh, nor in the land of el-Haddán, nor el-Rosták. Everywhere was bitterness and vileness, and every foe treated him with obloquy.<sup>22</sup>

THE IMA'M EL-KHALIL-BIN SHA'THA'N. Amongst the Imáms elected in 'Omán was el-Khalil-bin Sháthán, who probably reigned in the beginning of the 5th century of the Hijrah.

THE IMA'M RÁSHID-BIN SA'ÍD. Next was Ráshid-bin Sa'id, who died in the month of Moharram, A. H. 445. [A. D. 1053.]

*Verse.*

"We mourn not for the loss of goats or sheep or camels; but when one dies whose loss brings death to many, then is real woe."

THE IMA'M MOHAMMED-BIN HABÍS. On the day of his death, Mohammed-bin Habís was invested as Imám by Nijád-bin Músá, the Kádhí of the



late Imám, and the preceptor Abú-Bekr Ahmed-bin Mohammed pronounced the khotbeh. This was in 510 A. H. [A. D. 1116.]

\* \* \* \* \*

THE IMA'M MOHAMMED-BIN KHANBASH. Afterwards, Mohammed-bin Khanbash became Imám. He died in 557 A. H. [A. D. 1162], and was buried by the small black hill, called Jebel Thú-Juyúd, near Feleij el-Kantak. His death occasioned greater suffering to the people of 'Omán than that of any previous Imám.

THE IMA'M HAFS-BIN RA'SHID. His son Hafş-bin Ráshid was then elected.

THE IMA'M RA'SHID-BIN 'ALÍ. Then came Ráshid-bin 'Alí, who died on Sunday, in the middle of Thul-Ka'deh, A. H. 476. In one work, however, the date of his death is placed at A. H. 513. God knows which of the dates is most correct.<sup>14</sup>

THE IMA'M MU'SA-BIN ABÚ-JA'BIR. Then was elected Músá-bin Jábir-el-Mu'álí-bin Músá-bin Nejád, who died in the year 549 A. H. [A. D. 1153.] I have translated the following passage from the MS. work of the learned 'Othmán-bin Músá-bin Mohammed-bin 'Othmán, who lived in the quarter named el-Jarmah of 'Akr at Nezwá.

THE IMA'M HABÍ'S-BIN MOHAMMED. THE IMA'M MA'LÍK-BIN EL-HAWA'RÍ.

On the 17th of Jumádí-el-Awwal,<sup>15</sup> died the Imám Habís-bin Mohammed-bin Hishám, whose death was a severe affliction to the people. Málik-bin el-Hawárí became Imám in the year 809 [A. D. 1406], and died in 832 A. H. [A. D. 1429]. I have not discovered accounts of any Imáms during the interval that here elapses of a little more than two hundred years.<sup>16</sup> God knows whether those were years of an interregnum during which no Imám was elected, or whether the names of the Imáms have been lost to us.<sup>17</sup> I have, however, found an account of an expedition of the people of Shíráz against 'Omán, under Fakhr el-dín Ahmed-bin el-Dáyah and Shiháb el-dín with 4,500 horsemen. The people of 'Omán endured extreme suffering from these invaders. They ejected the principal persons of el-'Akr at Nezwá from their houses, and remained in this manner for four months in 'Omán. They also besieged Bahlá, but were unable to take it. Ibn-Dáyah having died, God caused their fall. The people also suffered from a severe famine. That was in the reign of the Sultán 'Omár-bin Nebhán in the year 674 A. H.<sup>18</sup> [A. D. 1279]. I have also lighted on an account of an expedition of one of the Amírs of Hormúz, named Mahmúd-bin Ahmed el-Káshí, who landed at the town of Kálhát.<sup>19</sup> At that time Abul-Ma'álí-Kahlán-bin Nebhán and his brother 'Omar-bin Nebhán ruled over 'Omán. On arrival at Kálhát, Mahmúd summoned Abul Ma'álí, who told him that he held possession of



only one district of 'Omán, whereupon Mahmúd replied, "Take as many of my soldiers as you please, and proceed against those of 'Omán who oppose you." Abul-Ma'áli then told him that the people of 'Omán had not the means of paying tribute. All this he said with a view to protect the people of 'Omán. Mahmúd dissimulated his hostile feelings, and sought to gain his end by stratagem; so he invited all the Bedouin chiefs of 'Omán and gave them presents, on which they promised him victory over the people of 'Omán and engaged to join him. He then proceeded by sea to Dhafar.<sup>20</sup> Arrived there, he slaughtered many of the inhabitants, plundered much property, and returned towards 'Omán. He embarked his baggage in vessels, and performed the first part of the journey by sea. When subsequently they landed and proceeded by land route, their provisions failed, and they were beset by hunger. So great was the scarcity, that a *mann* of meat sold for a *dirár*.<sup>21</sup> They also suffered greatly from thirst, water being scarce on that route. It is said that 5,000 of his men died, and some say more. This was in the year 660 A. H. [A. D. 1262]. I have also found another narrative of an expedition of the Owlád el-Reís<sup>22</sup> against 'Omán. They set out in the end of Showwál, A. H. 675 [A. D. 1276]. At that time the ruler<sup>23</sup> of 'Omán was the Seyyid<sup>24</sup> Kahlán-bin 'Omar-bin Nebhán, who advanced by the desert to oppose them, accompanied by all the people of el-'Akr. The Owlád el-Reís surprised el-'Akr, entered it, and burned its market places. They plundered the place of all it contained, carried off the women, and burned the magazines and the principal mosque. The books were likewise burned. All this occurred in the space of half a day. Kahlán thereupon returned with his force, and united with his detached parties. The Owlád el-Reís and their allies of the el-Haddán attacked Kahlán's army, and in the battle which ensued 300 men were slain.

It is probable that during the interval between Mohammed-bin Khanbash and Málik-bin el-Hawári, the government was in the hands of the el-Nebáheneh, but God knows! It seems probable, also, that they held power for more than 500 years, with this qualification that, after the term of years referred to, Imáms were elected, the Nebáheneh being rulers in some districts, and the Imáms being recognized in the rest.<sup>25</sup> God knows!

THE IMA'M ABUL-HASAN-BIN KHAMÍ'S. Seven years after the decease of Málik-bin el-Hawári, Abul-Hasan-bin Khamís-bin 'Ámir<sup>26</sup> was elected Imám. This was on Thursday in the month of Ramadhán, in the year 839, A. H. [A. D. 1435]. He died on Saturday, the 21st of Thul-Ka'deh, A. H. 846. [A. D. 1442.]

THE IMA'M 'OMAR-BIN KHATTÁB. In the year 885 A. H. [A. D. 1481], they elected the Imám 'Omar-bin Khattáb-bin Mohammed-bin Ahmed-bin Shidán-bin Salt.<sup>27</sup> He it was who seized the property of the Benú-Nebhán, and divided it amongst those about him of his own sect.<sup>28</sup> He took the



administration of this property into his own hands. This was by the unanimous wish of the Musalmáns, who assembled and held inquiry regarding the bloodshed and the property unlawfully seized and appropriated by the *Al-Nebhán*. It was found that it was more than their possessions.<sup>29</sup> The *Kádhí* under the *Imám 'Omar-bin Khattáb* was *Abú-'Abdullah Mohammed-bin Suleimán-bin Ahmed-bin Mufarrij*, and he appointed Mohammed-bin 'Omar-bin Mufarrij agent for those of the Musalmáns of 'Omán who had suffered injustice at the hands of the *Al-Nebhán*. Ahmed-bin 'Omar acted in like capacity for the *Al-Nebhán* Princes. Ahmed-bin *Šálih-bin Mohammed-bin 'Omar* adjudged the whole of the property of the *Al-Nebhán*, their lands, plantations, tenements, arms, utensils, water-runs, dykes, in fact all they possessed of dwellings, wells, furniture, and goods, to those whom they had oppressed. Mohammed-bin 'Omar accepted this decree for those of the people of 'Omán who had suffered injury, whether living or dead, old or young, male or female. By this decisive decree the property in question could be claimed by those injured. Many, however, were unknown, and their claims forgotten, and it was impossible in such cases to distribute the shares. All such unclaimed shares of the property were ordered to be given to the poor, it also being decreed that, whilst there was a just *Imám* reigning, he was the most fitting person to receive such property awarded to the poor, and to expend it for the glory and maintenance of the government of the Musalmáns. All persons who established their claims, were to receive their shares of the property of the *Benú-Nebhán*. On the property being awarded, an estimate was to be made of what was due in arrears for the yearly produce of such property, if the claimant had the necessary information, but if he was unable to estimate this, that portion of the claim was to come under the head of unknown claims, and to be assigned to the poor, and taken charge of by the *Imám* as above. This decree was confirmed and ordered to be carried into execution. "If any should alter it after hearing it, verily the guilt is on those who shall alter it, for God hears and knows."<sup>30</sup>

This order was passed on Wednesday evening, seven days before the end of *Jumádi el-Akhir*, in the year 887 A. H. [A. D. 1482]. This occurred in the second reign of the *Imám 'Omar*. For one year after his first election *Suleimán-bin Suleimán* rose against him, and his army was defeated at *Himat* in *Wádi Semáíl*. Afterwards he was re-elected. He was succeeded by

THE *IMA'M MOHAMMED-BIN SULEIMA'N BIN AHMED-BIN MUFARRIJ*, the *Kádhí*, in the year of the *Hijreh* 894 [A. D. 1489.] He was deposed and

THE *IMA'M 'OMAR-EL-SHERI'F* was elected in his place and reigned for one year, after which he retired to *Bahlá*. The people of *Nezwá* then re-installed Mohammed-bin *Suleimán*.

THE *IMA'M AHMED-BIN-'OMAR*. Next was Ahmed-bin 'Omar-bin Mohammed el-Zenjí.



THE IMA'M ABUL-HASAN-BIN 'ABD-EL-SELA'M. Then Abul Hasan-bin 'Abd-el-Selám reigned as Imám for less than a year, and was overthrown by Suleimán-bin-Suleimán, who made war against him.

THE IMA'M MOHA'MMED-BIN SULEIMA'N was then set up once more, and remained in power for a few days.

THE IMA'M MOHAMMED-BIN ISMA'ÍL. The next Imám was Mohammed-bin Ismá'il el-Ismá'ilí, who resided in the quarter of Wádi el-Gharbíyeh on the road which leads to the Mazár gate.<sup>21</sup> The cause of his being chosen was that Suleimán-bin Suleimán assaulted a woman, who was bathing at el-'Antak. The woman rushed out of the stream naked and fled from him. Suleimán chased her as far as the Wádi, when they were perceived by Mohammed-bin Ismá'il, who seized Suleimán, threw him down, and held him there until the woman had escaped into el-'Akr, when he let him go his ways. The Musalmáns were so pleased at this proof of his strength to do right and oppose wickedness, that they elected him Imám in the year 906 A. H. [A. D. 1500.]

He died on Thursday, nine days before the end of Showwál, A. H. 942<sup>22</sup> [A. D. 1535.] His son

THE IMA'M BARAKA'T-BIN MOHAMMED-BIN ISMA'ÍL was installed on the same day on which his father died.

On Saturday, ten days before the end of the month of Moharram, A. H. 965 [A. D. 1557], Barakát evacuated the fort of Bahlá, which was forcibly seized by Mohammed-bin Jafir-bin 'Alí-bin Hilál. Previous to this, however, in the year 964 A. H. [A. D. 1556], the powerful Sulṭán, Sulṭán-bin Mohsin-bin Suleimán-bin Nebhán had taken possession of Nezwá. Mohammed-bin Jafir continued to hold possession of the Fortress of Bahlá until the 'Al-'Omeyr bought it from him for three hundred laks. The 'Al-'Omeyr entered the Fort of Bahlá on Tuesday, nine days before the end of Jumádí el-Akhir, A. H. 967. [A. D. 1559.]

It seems probable that 'Omar-bin Kásim el-Fadheyli was Imám in the time of Barakát-bin Mohammed-bin Ismá'il, but this is not certain.

THE IMA'M 'ABDULLAH-BIN MOHAMMED. On Friday, fifteen days remaining of the month of Rejeb, A. H. 967 [A. D. 1559], the Imám 'Abdullah-bin Mohammed el-Karan was invested at Manh, and on Monday, two days before the end of the same month, he entered the Fort of Bahlá.

On Wednesday, three days before the end of the month of Ramadhán, A. H. 969 [A. D. 1561], Barakát-bin Mohammed-bin Ismá'il re-entered the Fort of Bahlá, which was vacated by 'Abdullah-bin Mohammed el-Karan. The learned theologian Ahmed-bin Maddád denounced both Mohammed-bin Ismá'il and his son Barakát. He says in his work—"The religion which we profess, and in which we worship God, enjoins renunciation of Mohammed-bin Ismá'il on account of his having forcibly levied zekát<sup>23</sup> from his



"subjects, whilst neglecting to protect them and prevent oppression. For it has been rightly handed down as an article of the religion of the Musalmáns that the "Jezíah"<sup>24</sup> or the "Şadakát" cannot be lawfully levied except by rulers who prevent the unjust and oppressive levy of exactions. According to the religion of the Musulmáns, their means of subsistence cannot be taxed in a land where they are not afforded protection and security."<sup>25</sup>

Likewise Mohammed-bin Mahbúb said that our Imám cannot lawfully levy taxes, nor receive the free offerings from a people whom he fails to protect from oppression. If he does so, he acts unjustly towards them, and there is no difference between him and the oppressors who plunder the people. The Imám must not take aught from such people, and must refrain from appointing governors over them without protecting them. The religion of the Musalmáns also forbids the levy of both *kharáj*<sup>26</sup> and *zekát* from one and the same class of the subjects. Serving Almighty God, we repudiate Mohammed-bin Ismá'il on account of his oppression of his subjects in forcing sales of the zekát due on the produce of the date plantations, in accordance with the arbitrary estimates of his agents, and in forcibly insisting on it being levied at that valuation to the injury of the people. For the forced purchase of the zekát on grain and dates, either in advance or after receipt, is not allowed by the religion of el-Islám. Such is prohibited by the book and the law and by accord of the peoples. Forced sales also are forbidden except in cases of storing up against times of famine or refusal to satisfy just claims. There is no difference of opinion in this matter. So we renounce and hold ourselves free from the guilt of Mohammed-bin Ismá'il and his son Barakát.

### Book V.

*Account of the later Princes of the el-Nebáheneh, and others, up to the accession of the Imám Náşir-bin Murshid. A.D. 1560 to A.D. 1624.*

It is related that when Sultán-bin Mohsin died, (which event occurred on Monday, eleven days before the end of Rabí'ul-Akhir, A. H. 973, [A. D. 1565]) he left three sons, Tahyás-bin Sultán, Sultán-bin Sultán, and Modhaffar-bin Sultán. The last named was foremost of them in the Government until he died, on a Saturday in the month of el-Moharram, in the year 996 A. H. [A. D. 1588.]. He left a young son, named Suleimán, who, on account of his youth, was incapable of assuming the reins of Government. His uncle Felláh-bin Mohsin, who was Málik of Maqínát,<sup>1</sup> on hearing of the death of Modhaffar, came to Bahlá, and assumed the Government in his brother's place. He continued to govern for seven years when he died. Suleimán-bin Modhaffar succeeded him when only twelve years of age, and ruled supreme in 'Omán and all its districts, levying



taxes from the people by fair or forcible means, from those at a distance, as well as those close by. The people of Nezwá collected to oppose him, and amongst the rebellious was a Jabari, named Mohammed-bin Jafir, who had a large force under his command. Suleimán-bin Modhaffar and 'Arrár-bin Felláh accompanied by Násir-bin Kaṭan and his followers marched against the rebels: and in the battle which ensued, Mohammed-bin Jafir was killed and his army defeated. Násir-bin Kaṭan, who was watching the result, interfered to prevent further slaughter.

Mohammed-bin Jafir left a young son, named Mohammed, whose mother was a daughter of 'Omeyr-bin 'Ámir. Suleimán-bin Modhaffar espoused this lady, when her husband was killed, and spent the cold weather with her in the plains of el-Shemál, leaving his cousin 'Arrár-bin Felláh to act for him at Bahlá.

Mohenná-bin Mohammed el-Hadeyfi was at that time Málik of Sohár. Having received intelligence that the Persians were preparing to attack him, he sent to ask Suleimán-bin Modhaffar to assist him against them. The latter consented and proceeded with his forces to Sohár, where the army was completely organized. The Persians arrived by sea, and a severe fight occurred, which resulted in the defeat of the Persians and the slaughter of a great number of their army. After this, Suleimán returned to his residence at Bahlá. He had with him his cousins 'Arrár, Nebhán, and Makhzúm, sons of Felláh-bin Mohsin,<sup>2</sup> of whom there were ten in all. 'Arrár was the first of them, and his brother Nebhán had no will but his. El-'Arrár was Prince (Melik) of el-Dháhireh, and Suleimán bestowed on Makhzúm the district of Yanḡal.

Of the cousins of Suleimán there was also Himyer-bin Háfidh, who had four sons, Háfidh-bin Himyer, Sultán-bin Himyer, Kahlán-bin Himyer, and Húd-bin Himyer. The first of these died a year after the return to Bahlá. There were in Suleimán's service also his relations Muhenná-bin-Mohammed-bin Háfidh and 'Alí-bin Thahal-bin Mohammed-bin Háfidh.

Suleimán had Wazírs at el-Kareiyeh and amongst the el-Nizár of Azkí and at Samed el-Shán. The latter place belonged to the el-Jahádhim tribe, whom Suleimán treated with severity. They were forced to fly from his violence and power, and remained dispersed in the districts for the space of thirty years, fearing to return to the town.

The Benú-Hináh clan was held in the highest estimation by Sulaimán-bin Modhaffar, and they were a most numerous, powerful, and warlike tribe. The leaders of this tribe were Khalf-bin Abú-Sa'id, and Seif-bin Mohammad-bin Abú-Sa'id, men renowned amongst the people of their time. There were two tribes of the people of Seikam, the Benú-Ma'an and Benú-Neyyer, both cognate to, and allies of, the Benú-Hináh. A feud broke out between these two tribes, arising from a quarrel



between two women, and because of the mutilation of a camel, and they became divided; the Benú Ma'an with the Benú-Shakeyl joining Suleimán-bin-Modhaffar, and the Benú-Nayyer joining the Benú-Hináh. On this, Khalf-bin Abú-Sa'id went to his house at Dárseyt<sup>2</sup> with his cousins. Suleimán-bin Modhaffar was then in the desert, and when he heard what had occurred, he sent to his Wazír Mohammed-bin Khanjar, desiring him to tell Khalf to desist from interference with the tribe (Benú-Ma'an).

The Wazír sent to Khalf accordingly, but finding he did not stop his proceedings, he reported to his master that Khalf would not attend to his orders. Suleimán then sent instructions to his Wazír to operate against the property of the Benú-Hináh at Kadam, and the Wazír ordered this to be destroyed. As this property belonged to the Sheykh Khalf, this occasioned a rupture between him and Suleimán, and in reprisal Sheykh Khalf ordered his cousins to make a raid on Bahlá. This they did, and they killed many of the inhabitants of that place. The Wazír Mohammed-bin Khanjar then wrote to inform Suleimán of what had occurred at Bahlá. On hearing this intelligence, Suleimán returned from el-Shemál to Bahlá, and endeavoured to effect a reconciliation with the Benú-Hináh.\* In this he was unsuccessful, and both sides prepared for a struggle; and the Sultán Suleimán collected all his available forces to attack the Benú-Hináh. As soon as the Sheykh Khalf heard of this, he sent to ask aid of the Amír 'Omeyr-bin Himyer, the Prince of Semáil, against Suleimán-bin Modhaffar. 'Omeyr consented and came from Semáil with his followers. Suleimán, being apprised of this movement, marched with his forces to Ghobrah, near Bahlá, and there encountered 'Omeyr-bin Himyer. A battle was fought which lasted for an hour, and which resulted in Suleimán returning to Bahlá, and the Amír 'Omeyr to Semáil, the latter leaving some of his men in Dárseyt. The Amír was a person of noble and prudent disposition. On his arrival at Semáil, he sent to the Benú-Jahádhim who were dispersed in various villages. They came at his summons, and a friendly alliance was established. He next sent to the Sultán of el-Rosták, Málik-bin Abul-'Arab, to invite him to Semáil, who accepted his invitation, and with him went also Abul-Hasan 'Alí-bin Kaṭan. From Semáil they proceeded with the Benú-Jahádhim to Semed el-Shán, where they entrenched themselves. The Amír left with them some of his own clansmen and whatever provisions, water, and munitions of war they required, and returned himself to Semáil. As to Suleimán-bin Modhaffar and the Benú-Hináh, there was incessant warfare between them.

The Amír 'Omeyr-bin Himyer and the Sultán Málik-bin Abul-'Arab betook themselves to Nezwá to watch the cause of events. Now Málik-bin Abul-'Arab had a Wazír in 'Einí of el-Rosták, and certain inmates of his house ejected the Wazír. Next, one of the inhabitants of 'Einí repaired



to Suleimán-bin Mudhaffar, and sought his aid against the hostile faction. Suleimán sent some of his men under 'Arrár-bin Felláh to their assistance. When the Sultán Málik-bin Abul-'Arab heard what had occurred in his home, he prepared to set out to return thither. The Amír, however, said to him: "Stay with us and fear not, for this affair promises happy results." He asked how that could be with the enemy in his house. The Amír replied, "That is my affair: and, please God, I shall be victorious. God (whose name be exalted!) has said, 'Difficulty and ease go hand in hand.'" The poet says—

"When events overwhelm, and the spirit is ready to sink beneath them; when misfortunes descend and patience is failing,—still in the end comes relief."

The Benú-Hináh then invited the Amír 'Omeyr-bin Himyer to advance with his men, promising to give them admission to Bahlá. He accordingly proceeded a part of the way with his forces, but, deeming them too weak in numbers, he returned to Nezwá. Meanwhile the Benú-Hináh were in expectation of his arrival on the night fixed for his entry. On his failing to join them, the Sheykh Seyf-bin Mohammed went from Dárseyt to Nezwá to see him, and a stormy discussion ensued between them, the Sheykh censuring the conduct of the Amír. The latter ended by desiring the Sheykh to take as many of his men as he pleased. The Sheykh accordingly took a great number of men and proceeded to Dárseyt, whilst the Amír awaited the result at Nezwá. Suleimán-bin Mudhaffar was informed that the enemy's force had marched from Nezwá to Dárseyt, some saying their object was el-Kareyeh, others Seyfam, and others again Bahlá. So Suleimán divided his army, placing a division at Kareyeh and another at Seyfam. He also built a fort to cover Felej el-Juzyein, fearing an attack in that quarter, and placed a detachment in it. Of the rest of his forces some were stationed at Bahlá, and a detachment at el-Khadhrá. He also posted men in the el-Gháf quarter.

Himyer-bin Háfidh with some of his retainers held the principal mosque of the town, the rest of his men being placed in el-'Akr. His cousin 'Arrár-bin Felláh with his followers was at 'Einí of el-Rosták.

Seyf-bin Mohammed proceeded with his force from Dárseyt with the intention of occupying Bahlá. They first entered from the western side, scaling the outer wall. This design they carried out so skilfully, that their entry was not discovered by any one. Seyf then divided his force into three parties, one for the right, one for the left, and the third in the centre; the latter being opposite the chief mosque of the town. In this manner he occupied positions well chosen for further operations. Subsequently, in the fighting which took place, many of Suleimán's chiefs and warriors were slain, and he retained only the Fort and el-



Khadhrá. Seyf-bin Mohammed then proclaimed an amnesty, and was joined by many of the towns-people.

When the news reached the Amír 'Omeyr at Nezwá that his men had entered Bahlá, he set out accompanied by the Amír Sultán-bin Mohammed, and the Sultán Málík-bin Abul-'Arab, and el-Manşúr 'Alí-bin Kaţan and the people of Nezwá. Khalf-bin Abú-Sa'id el-Hinái also moved with his followers from Dárseyt to assist their comrades. They entered Bahlá by night, and the Amír 'Omeyr alighted in the el-Gháf quarter. El-Khadhrá was held for the Sultán Suleimán by 'Alí-bin Thahal with a large force; and the Amír sent word to them inviting them to evacuate the place with their flags.\* 'Alí-bin Thahal went amongst his men exhorting them to hold out, but they refused to obey him, and prepared to leave the place.

Meanwhile 'Arrár-bin Felláh, who was at 'Einí of el-Rosták, hearing of the enemy's entry of Bahlá, immediately marched with his followers to el-Kareyeh.

The siege of the Fort of Bahlá continued, and it was surrounded by the enemy. The besiegers constructed a wooden tower on a tamarind tree in the market-place during the night. In this one of the el-Jahádhim, named Jum'ah-bin Mohammed, esconced himself and shot one of the garrison. Another such tower was built by the Amír on the mosque, and its occupant also shot one of Suleimán's soldiers in the upper part of the Fort.

The besiegers at length demolished the wall of the Fort during the night. Suleimán's men, however, opposed them and prevented their entry. Then the garrison, fearing to be slain, asked permission of Suleimán to evacuate the place. Still they held out for thirteen days more, when, Suleimán having given permission, they asked the Amír 'Omeyr to allow them to march out. He allowed them to pass out with their personal effects, and sent his Wazír to see them safe. Suleimán-bin Mudhaffar with his cousins and followers went forth from Bahlá, and proceeded to el-Kareyeh, whence he and 'Arrár went to el-Dháhireh.

The Amír 'Omeyr then ordered the Fort of Bahlá to be razed to the ground, which was done, and not a wall nor a building was left standing. Thus is manifested the power of God, who bestows kingdoms on whomsoever He willeth.

'Omeyr then left Khalf-bin Abú-Sa'id in charge of Bahlá and returned to Semáil. Khalf had been only four months in Bahlá, when he was attacked by Suleimán-bin Mudhaffar and his cousin 'Arrár-bin Felláh, who entered el-Khadhrá whilst he was in el-'Akr. This occurred on the 4th of Rabi 'ul-Awwal, A. H. 1019 [A. D. 1610]; and at that time Seyf-bin Mohammed with some of his followers was in el-Sirr. Suleimán-bin Mudhaffar sent to Khalf-bin Abú-Sa'id, and offered him the option of



marching out with his personal effects, and Khalf accepted this offer after obtaining an amnesty for the people of the district. Some of the latter remained in their abodes, others went forth from fear of the Sultán.

When Seyf-bin Mohammed heard of these occurrences, he returned from el-Sirr, and the Amír 'Omeyr also, aware of his movements, marched from Semáil to Nezwá and thence on to el-Kareyeh, which he took and made over to Seyf-bin Mohammed to hold for him. The Amír then returned to Nezwá, where he remained some days watching events.

Soon after, Suleimán-bin Mudhaffar died, leaving a son of tender years, and 'Arrár-bin Felláh assumed the Government of Bahlá. Seyf-bin Mohammed then proceeded to Nezwá, and, taking a large force from the Amír 'Omeyr, went to el-Kareyeh, where they halted for seven days. Thence they marched on Bahlá, and entered the quarter called Abú-Mán, and besieged 'Arrár-bin Felláh for some days. Then he sent them on their ways with their arms, &c., and the Fort of el-Kareyeh remained in his hands, and he spent some years in repairing it.

This entry (?) took place on 6th of Šafar, A. H. 1024.' [A. D. 1615.]

After him Mudhaffar-bin Suleimán held power, but he died after two months.

Makhzúm-bin Felláh then governed for two months, after which Nebhán and Seyf-bin Mohammed rose against him to eject him from the Fort. They allowed him at his request to march out without arms or effects. He proceeded to Yanqal in el-Dháhireh.

Nebhán-bin Felláh was the next to rule. He placed his cousin 'Alí-bin Thahal as his representative in Bahlá and after him Seyf-bin Mohammed. Nebhán-bin Felláh then went to his home at Maḡaniyát after removing his cousin Sultán-bin Himyer from Bahlá, fearing lest he should usurp the government. The latter went to Šohár, and Seyf-bin Mohammed held his place for a year. God knows!

After that the Amír 'Omeyr-bin Himyer went up with his followers to Bahlá, but, being opposed by Seyf-bin Mohammed, he returned with his troops to Nezwá to watch events. After a while, 'Omeyr again marched to Bahlá and entered el-'Akr. Seyf-bin Mohammed, who happened to be at Dárseyt at the time, on hearing of 'Omeyr's movement, marched with his followers and entered the Fort unopposed. Thence he wrote to Nebhán-bin Felláh, informing him that the enemy had entered the town, and requesting him to come with the men he had with him. He was some days collecting his force, and meanwhile the Amír 'Omeyr had occupied all the strong positions in the district. Seyf-bin Mohammed continued to hold the Fort with his men, expecting Nebhán to succour him, but the latter did not appear. 'Omeyr-bin Himyer sent to offer him safe-conduct out, but Seyf declined, hoping for the arrival of Nebhán. When, however, he despaired of



this, he accepted the terms, and was allowed to march out with his men with all their effects. Seyf then went to el-Ḳareyeh, and 'Omeyr remained for some time at Bahlá, after which he sent to Seyf-bin Mohammed, and a reconciliation took place between them. Seyf thereafter continued to administer the Government, and ruled the people justly. He exercised authority over his cousins, who remained faithful to him. After the affair of Seyf-bin Mohammed had been settled in this manner, the following events occurred. Sultán-bin Himyer, Mohenná-bin Mohammed-bin Háfidh, and 'Alí bin Thahal were then residing at Şohár with Mohammed-bin Mohenná el-Hadeyfí, who wished to take them to their cousin Nebhán-bin Felláh at Maḳaniyát, in order to mediate a reconciliation between them. Makhzúm was then in the Fort of Yanḳal. They were unable to come to terms. Afterwards Sultán-bin Himyer the Nebhání and 'Alí-bin Thahal moved with their combined forces from el-Dháhireh against Bahlá, and entered the quarter of the Benú-Şalt of Bahlá, on the 9th of Şafar, 1024 A. H. [A. D. 1615]. The Amir 'Omeyr-bin Himyer, who was at Semáil, hearing of their movement, marched at once to Bahlá with a force, and after him came up Seyf-bin Mohammed, and an engagement was fought. The Nebhání army built a wall of defence all round the quarter they occupied. 'Omeyr sent to his adherents in all the villages. He was joined by the Sheykh Májid-bin Rabí'ah-bin Ahmed-bin Suleimán el-Kundi and 'Omar-bin Suleimán el-'Afif and the Sheykh Sa'id-bin Hamd-bin Abú-Sa'id el-Ná'abí, with the principal inhabitants of Nezwá and Manh. Sultán-bin Himyer and his force remained for a long time so closely besieged, that not a man could come out, nor could any one enter to them. At length, Sultán offered to evacuate the place, if suffered to pass in safety, and the Amir consenting, they were allowed to march off to el-Dháhireh with their arms and effects.

Sultán-bin Himyer, Ḳahlán-bin Himyer, 'Alí-bin Thahal, and Muhenná -bin Mohammed-bin Háfidh continued to reside at Maḳaniyát until Nebhán dismissed them from dread of their ejecting him from the place. They then proceeded to Şohár, and dwelt there for a year with the Hadeyfí Mohammed-bin Muhenná. But God knows !

Sultán-bin Himyer next suggested to Mohammed-bin Muhenná that they should make an attack on the district of 'Omeyr-bin Himyer about el-Síb of the Báṭineh. 'Omeyr was away, and there were present in his districts Sinán-bin Sultán, the Amir 'Alí-bin Himyer and Sa'id-bin Himyer. Mohammed-bin Muhenná and Sultán-bin Himyer mounted with their followers and set out from Şohár, and the news of this was carried to Sinán and 'Alí and Sa'id. In as short a time as would serve a man to put off his shoes, or wash his feet, the hostile forces met and swords were bared on land and sea, on plain and hill, and a terrible battle was fought, in which



'Alí-bin Himyer was slain. The contest then terminated, and Mohammed-bin Muhenná returned to Şohár.

When the Amír 'Omeyr-bin Himyer, who was at Bahlá, heard what had befallen his brothers and his cousin, he solemnly vowed not to turn back from Şohár until he had reaped the enemies with the sword, burnt them with fire, and scattered them in all directions. He commenced collecting forces by land and by sea, and there assembled round him a force of whom God alone could tell the number. He then proceeded to Maskat, to obtain re-inforcements by sea. He sent also to the Malik of Hormúz for assistance, and he sent him a number of ships laden with stores and men and munitions of war. A ship also had arrived on the coast from India, carrying a large number of troops and some munitions of war," and had been driven back by the wind to Maskat. The Amír 'Omeyr-bin Himyer took it, and proceeded with the Christians and others who had joined him from Maskat, and halted for seven nights at Báţineh el-Síb. Mohammed-bin Jafír, hearing of this, marched with his tribe to the aid of Mohammed-bin Muhenná, and entered Şohár, to the joy of the latter, who gave him admission to the Fort and encouraged his men. A collision took place between Mohammed-bin Jafír's men and a party in one of the bastions of the Fort, and they fought for an hour. Mohammed-bin Jafír and his people then quitted Şohár.

When the Amír 'Omeyr heard of this occurrence, he moved his forces on Şohár by land and sea, and entered that town on the 19th of Rabí' ul-A'khir, A. H. 1025. [A. D. 1616.]

A battle which ensued between the rival forces, lasted from morning to night, but without decisive result. A day or two later, the Christians disembarked from the ships with their implements of war. In advancing they pushed before them gabions of cotton, to shelter them from the musketry fire. They also employed cannon, which moved by land on wooden carriages, and were fitted with wooden screens. On one side of the Fort, Mohammed-bin Muhenná had a tower in which were a large number of soldiers. The besiegers dragged their cotton screens to a position opposite this tower, and battered it with cannon until a breach was effected, when the garrison evacuated it and the Christians entered. When Mohammed-bin Muhenná heard of this, he urged on his men, and a fight took place by night at the tower, in which 'Alí-bin Thahal-bin Mohammed-bin Háfidh and Mohammed-bin Muhenná el-Hadeyfi were killed, on the 21st of Rabí' ul-A'khir, A. H. 1025. [A. D. 1616.]

After this event, Sultán-bin Himyer-bin Mohammed-bin Háfidh el-Nebháni with his brother Kahlán-bin Himyer and his cousin Muhenná-bin Mohammed-bin Háfidh and their forces occupied the fort.

As soon as the Amír 'Omeyr became aware of the death of the chief of



the enemy's army, he led his men to battle. The encounter took place in the quarter of el-Nakhl, 'Omeyr and his followers issuing without opposition from the vicinity of the chief mosque. In the contest Sultán-bin Himyer was killed, and the enemy's forces were routed and dispersed; some were slain, some burnt, some captured, some wounded, and the rest fled they knew not whither. In this manner the whole population of the place was disposed of, and the town itself was completely burnt. The Christians remained in occupation of the Fort of Şohár, and the Amír 'Omeyr returned to Semáíl intoxicated with joy.

At this period, Makhzúm-bin Felláh was in possession of the fort of Yanqal. He seized two of them (?), and ordered one of his slaves to execute one of these two. The slave bared his sword to strike, on which the prisoner prayed him to protect him. He did not heed him and struck one blow. A second time he cried in vain for mercy, and when he was about to strike a third blow, the man appealed for protection to God. Makhzúm, on this, rushed on him to gag his mouth, at the same instant the slave's sword descending struck the hand of Makhzúm, who died from the effects of the wound in seven days. As for the prisoner, the slave dragged him away thinking him dead, but he was found by one of the towns-people who succoured him, and he recovered of his wounds and lived for some time after that. This happened three months after the capture of Şohár.

When Nebhán heard of his brother's death, he rode from Maḩaníyát to Yanqal, and placing there a Wazír returned to the former place. Since he had left Bahlá for el-Dháhireh, a period of thirty months had elapsed. After that Nebhán-bin Felláh went a second time to Yanqal, leaving some of his men in the fort of Maḩaníyát. But the people of the latter place were weary of his tyranny and oppression, and planned to expel him from the place. So they sent an emissary to the Amír 'Omeyr-bin Himyer and to Seyf-bin Mohammed, asking their aid. Both of them marched with their followers to Maḩaníyát, and entered the fort without opposition or bloodshed. After remaining there some days, they rode with a portion of their forces to Yanqal. When Nebhán-bin Felláh became aware of this, he feared for his safety, and mounting on horseback fled with only four attendants and without baggage to the town of his maternal uncles of the el-Riyáyeseh. This was twelve days before the end of Şafar, 1026 A. H. [A. D. 1617.]

The Amír 'Omeyr and Seyf-bin Mohammed remained for some time at Yanqal. The Amír then made over the lands to the rightful possessors to freely enjoy the produce thereof, and returned to Maḩaníyát. He enquired of the inhabitants what Nebhán was in the habit of taking from them. They told him that he took one half the produce of the date trees and one quarter of the yield of the sown ground. The Amír 'Omeyr reduced



the impost to one-tenth of the yield of the crops. The property of the Sultán was assigned to whomsoever should be in charge of the fort. After placing 'Omar-bin Mohammed-bin Abú-Sa'id in command of the fort, the Amír and Seyf-bin Mohammed returned to Bahlá.

Meanwhile Nebhán-bin Felláh, having procured a force from his uncles of the Al-Reís, returned to el-Dháhíreh and entered Fidá. There he remained for some days, when an inhabitant of Yanqal, who was one of his well-wishers, came to him and offered to procure him admission to the town and support against the garrison, and to open the fort to him. So he went and re-entered Yanqal with his followers in the middle of Rabí' ul-Akhir, A. H. 1026 [A. D. 1617.] He occupied all the commanding positions of the place except the fort itself, which was held by some of the Benú-'Alí tribe. Nebhán proceeded to besiege these, and some fighting took place. One of the besieged went forth from the Fort, and proceeded to ask assistance of the Amírs who dwelt in el-Shemál, Kaṭan-bin Kaṭan and Náṣir-bin Náṣir. They with their followers proceeded to Yanqal, and attacked and dispersed the forces of Nebhán-bin Felláh.

On hearing of the entry of Yanqal by Nebhán-bin Felláh, the Sheykh Seyf-bin Mohammed el-Hináí had marched with his troops to oppose him. When he had traversed a portion of the way, he heard what had happened to Nebhán at the hands of the Amírs, and thereupon returned to Bahlá with his army.

The Amír 'Omeyr-bin Himyer at that time collected men to aid the Sultán Málik-bin Abul-'Arab el-Ya'rabí against the Benú-Lamak, and having lent the aid of all his forces, the result was disastrous to the Benú-Lamak.

Seyf-bin Mohammed el-Hináí remained in Bahlá, and the Al-'Omeyr in Semáil, and Málik-bin Abul-'Arab in Rosták and the el-Jibúr in el-Dháhíreh until the appearance of the wise Imám of the Musalmáns, Náṣir-bin Murshid, who subdued all 'Omán and reduced to obedience all its districts, purging the land of tyranny and oppression, of infidelity and rebellion, and restoring to it justice and security, and governing the people with equity and kindness until God took him to Paradise.

I shall, please God, relate his advent in the following book.

### Book VI.

*Appearance of the Imám Náṣir-bin Murshid and an Account of the Imáms who succeeded him up to the occurrence of dissensions amongst the el-Ya'á-rabeh. A. D. 1624 to 1718.*

When it was the will of God to be gracious to the people of 'Omán, and to save them from further violence and oppression, after the sufferings



they had experienced from civil wars, it came to pass that an uneventful period ensued in their annals, during which the fierce passions and animosities which had animated them were obliterated from their minds. Generation succeeded generation, but the country long continued impoverished after those truculent chiefs and contending factions had disappeared from the scene. There remained only the record of the virtuous amongst them and what they commemorated in their books and traditions. Learning declined and the learned were few. Friendly intercourse was resumed and the fire of hatred died out of their hearts; the flames of war were extinguished, and party differences were reconciled. A time came when learning had so declined and its possessors were so scarce, that it was said that one of the Princes of the Ya'árah of Wabl of el-Rosták wanted a Kádhi and was unable to find one amongst the followers of the true sect,<sup>1</sup> and therefore selected a Kádhi from the heretics; of what sect I know not. This person endeavoured to overturn our sect and establish his own instead. The people of 'Omán, on hearing of this, sent to that Prince, who thereupon dismissed the Kádhi and appointed for them one of their own persuasion. From him the people of el-Rosták received instruction and became steadfast in the faith.

The majority of the Meliks of 'Omán were wicked and turbulent oppressors, and they were abetted in their tyranny by the chiefs of the tribes. Throughout the land, whether in desert or valley, everywhere oppression was rampant. The people of 'Omán suffered from those evil doers the severest misery, from which neither the young nor the aged escaped. All alike were subject to be plundered, or seized and imprisoned, to be scourged or even slaughtered. And God caused animosity and hatred to grow in their hearts.

Now the people of 'Omán are endowed with certain qualities, which it is my hope they may never lose. They are a people of soaring ambition, and of haughty spirit; they brook not the control of any Sultán, and are quick to resent affront; they yield only to irresistible force, and without ever abandoning their purpose. A man of comparatively poor spirit, judged by their standard, is on a par as regards magnanimity with an Amír of any other people. Each individual aims at having the power in his own hands or in the hands of those he loves. He desires every one to be submissive to him, and his neighbour has the same ambition.<sup>2</sup> Unfortunately none are worthy of such things, but those whom God elects, pious, chaste, and blessed persons, who are not swayed by their desires, nor prone to be led away by blind passions. So it came to pass that fierce animosities broke out amongst them, and they fought amongst themselves, plundering, and carrying off captives. In short, each party neglected no means of injuring their opponents. There were none to be found, whether dwellers in houses or dwellers in tents, whether



"Bedú" or "Hadhr"<sup>2</sup>, whether on the mountain heights or in the sandy levels, but had quaffed the draught of terror, and suffered from the general destruction which encompassed religion, property, and life, except those for whom God tempered their troubles and whom He saved from the strife by His bounteous protection. In this manner, they ceased not to struggle in the abysses of desolation, walking in evil ways, until God vouchsafed unto them the appearance of his wise servant, the Imám of the Musalmáns, Náṣir-bin Murshid-bin Málik<sup>3</sup>, which occurred as follows.

It happened that when Málik-bin Abul-'Arab, who has been mentioned in the previous book, was their Sultán, dissensions occurred amongst the people of el-Rosták. Those of the Musalmáns who were steadfast in the faith, consulted with the learned regarding the election of an Imám, to govern them in accordance with right and justice, and they deliberated as to who was worthy of their choice. At that period, the most respected person amongst them was Khamís-bin Sa'id el-Shakáṣi. Their unanimous decision was to elect the illustrious Seyyid [Náṣir]. So they went to him and asked this of him, exhorting him to rule uprightly.

THE IMA'M NA'ṢIR-BIN MURSHID. He consented, and was elected Imám in the year 1034 A. H. [A. D. 1625], and fixed his residence at Kaṣrá, in the district of el-Rosták, and acted justly, and exerted himself to uproot ignorance. The tribe el-Yahmad actively supported him, and agreed to seize by night the fort in which his cousins had resided since the death of his grandfather Málik. After gaining possession of the fort, the Imám proceeded to the town of el-Nakhl, in which his uncle Sultán-bin Abul-'Arab was residing, and took that place after a siege of some days. A portion of the inhabitants, however, refused to acknowledge the Imám and besieged him in the fort, until he was relieved by a body of the el-Yahmad, and his enemies were dispersed, after which he returned to el-Rosták. There he received visits from Ahmed-bin Suleimán el-Rúeyhí with a party of the el-Rúáheh and envoys from Máni'-bin Sinán el-'Omeyrí, who abode some time with him and invited him to Semáíl and Wádí Bení-Rúáheh. To this he assented, and marched accompanied by some of the el-Yahmed until he reached Semáíl, where he left some of his men with Máni'-bin Sinán, and proceeded on to the Wádí Bení-Rúáheh. As agreed upon with Máni', he went on thence to Nezwá, attended by the Kádhí Khamís-bin Sa'id. On reaching Izki, many of the inhabitants gave him personal and pecuniary assistance, and he took possession of the place, and proceeded towards Nezwá, where he was welcomed by the people and entered the town in safety. He took up his residence in el-'Akr, and continued to administer justly for some months. The Benú bú-Sa'id,<sup>4</sup> the chief family of el-'Akr, then formed a conspiracy in view of ejecting the Imám from the place. The execution of this plot was fixed for a Friday, when the Imám went forth to prayers, but



he received timely warning from a person, to whom he had shown kindness, of what they meditated, and when he had ascertained the truth of the intelligence, he ordered the family to be banished from the district, but forbade any one to slay or attack them. So they were forced to go forth, and dispersed throughout the districts. A party of them resorted to Mání'-bin Sinán, who had made a compact with the Imám and taken an oath to follow the truth. By receiving these persons he broke his word. Another body of them took refuge with the el-Hináí at Bahlá, and assisted that tribe in their war against the Imám, which then broke out.

The Imám ordered a new Fort to be constructed in 'Akr of Nezwá in lieu of the old one, which had been built by el-Şalt-bin Málik, and the work was completed.

The people of Manh also invited him to extend his just rule to them, and he proceeded to that town, which was opened to him, and administered the affairs with the active and substantial support of the inhabitants. So also the people of Semed el-Shán came to him. The governor [Málik] of Semed at that time was 'Alí-bin Kaţan el-Hilálí. The Imám despatched an army under the command of the learned Sheykh Mes'úd-bin Ramadhán, who took possession of the town. At the invitation of the people of Ibrá, the Málik of which was Mohammed-bin Jafir, the Imám sent a force there also, which took the place.

In this way the whole of el-Sharkíyeh submitted to the Imám, except Şúr and Keriyát, which were held by the Christians.

The Imám next assembled an army and marched against the el-Hináí of Bahlá. When he had proceeded as far as the plain of el-Markh, he discovered treason amongst certain persons of his army, and deemed it most prudent to return to Nezwá, where he commenced raising a fresh force. A large number of men being assembled, he marched with them towards el-Dháhireb, and succeeded in gaining possession of Wadí Faddá, where he ordered a Fort to be built. The inhabitants of the uplands of Dhank, whose leader was the learned Sheykh Khamís-bin Rueyshid, joined the Imám, and also the men of el-Ghíálin, and his authority was established in spite of his enemies.

After this the Imám made a tour of the districts he had conquered, until he reached Semed el-Shán, whence he returned to el-Rosták with the Benú Riyám.<sup>6</sup> There he remained until the army of Mohammed-bin Jafir advanced to the town of Nakhl, which they entered and took possession of, all but the Fort. The Imám marched against them at the head of a numerous army, and was aided by the el-Ma'áwal clan. The enemy had only occupied the town two or three nights, when they were forced to fly, and the Imám returned to el-Rosták.

Soon after, the Sheykh Khamís-bin Rueyshid came to the Imám seek-



ing his assistance against el-Dháhireh. The Imám thereupon prepared an army with which he marched to the assistance of the Sheykh, and halted at el-Sakhbarí. The people of el-Sirr and el-Dháhireh assisted the Imám with contributions of men and money. Thence he proceeded to the Fort of el-Ghabbí, in which was posted the main body of the A'l-Hilál with "Bedú" and "Hadhhr." Here there was a severe engagement, in the course of which the Imám's brother Je'ad-bin Murshid was killed. The Imám then marched to 'Ibri', which he took, and remaining there two nights, he returned to el-Sakhbarí, after which he besieged the Fort of el-Ghabbí until God gave him victory over it, when he placed in it as Wálí Khamís-bin Rueyshid. In the town of Bât he placed as Wálí a person belonging to el-Rosták, associating with him Muhammed-bin Seyf el-Howkání. These two the Imám ordered to reduce the remaining towns of el-Dháhireh, and himself returned to Nezwá.

The A'l-Hilál, who occupied a position by the water courses near Dhank, made war on the Wális. The latter encountered them at el-Deir, routed them, and captured the camels of Kaṭan-bin Kaṭan, to make use of them in overcoming the others. They also laid siege to Kaṭan-bin Kaṭan's Fort. Kaṭan-bin Kaṭan then went to the Imám, and offered to surrender his Fort, if his camels were restored to him. These terms were accepted, and the Imám ordered the camels to be given back to Kaṭan, who surrendered his Fort and was confirmed as Wálí of it by the Imám.

The two Wális then proceeded to Maḵaniyát, which was held by a Wazír of the el-Jibúr. The latter tribe raised the whole of the Benú-Hilál, "Bedú" and "Hadhhr," and the Owlad el-Reis, and marched towards Maḵaniyát; but, considering themselves unequal to the relief of that place, they advanced on Bât. The Wális feared for the safety of that town on account of the scanty supply of water on which the Governor relied, so the Musalmáns marched from before Maḵaniyát, and surprised the el-Jibúr at Bât. After an encounter, the el-Jibúr retreated towards Maḵaniyát; but the Musalmáns overtook them, and a battle was fought which lasted from morning prayer till noon. The Musalmáns had to exert themselves to the utmost, and the slaughter of the rebels was so great, that it is said they were unable to bury the slain separately, and were obliged to put seven and eight corpses in one pit. So God upheld the Musalmáns.

When intelligence of this affair reached the Imám, he assembled an army and marched with it against the el-Hinái of Bahlá, at which place he arrived on the night of the festival of the Híjj. He besieged the place for two months, all but three days, when the el-Jibúr came to the relief of the el-Hinái. They were encountered by the Imám's troops, and a severe engagement took place, in which Kásim-bin Mathkúr el-Dahmashí and a great number of the army of the el-Jibúr were slain. The latter then



retreated, leaving the Hinái chief and his followers besieged in the Fort. He was at length forced to surrender, and evacuated the place with all his men, arms, and property, leaving the Fort empty. The Imám after placing a Wáli there returned to Nezwá. The Imám next marched to Semáil against Máni'-bin Sinán el-'Omeyri. The latter, as soon as he heard of the Imám's approach, made his submission, and advised the Imám to suffer him to remain in the Fort, promising to be faithful for the future. This the Imám consented to, and, after completing his design of rebuilding the old Fort of Semáil, returned to Nezwá.

After that, the Imám proceeded with a force to Maḳaníyát, where he attacked and defeated the enemy. The garrison, however, held out for nearly three months in the Fort, after which time the Imám captured it, and placed Mohammed-bin 'Alí there as Wáli.

Sa'id el-Khiyálí and his clan ceased not to persevere in their enmity towards the Imám, and to correspond with the el-Jibúr, until the latter admitted them to the town of el-Sakhbarí, where they slew a man of the el-Dhaháhakeh and many of the Imám's soldiers and others, the number of whom God alone knows. The Imám's army was completely shut up, and several engagements were fought; one a very severe one at el-'Ajeyfiyeh, another at el-Ghábeh, another at el-Maḥhareh, another at el-Zíyadeh, and many more hard fights, so that the pillars of el-Islám were well nigh crumbled to ruins. The Wáli was deserted by many of the people, and left with only a small number, beset by the enemy banded to oppose him, so that his resolution was almost overcome by his terror. He remained besieged in the fort of el-Ghabbí, the governor of which was Mohammed-bin Seyf. When Mohammed-bin 'Alí, Wáli of Maḳaníyát, became aware of the state of affairs, he assembled a force to relieve Mohammed-bin Seyf at el-Ghabbí, and, coming on the enemy unawares, he entered the place, and defeated and scattered them in all directions. Some gained el-Sakhbarí, some fled to the desert, and the rest set out for Yanḳal, which place was held by Náṣir-bin Ḳaṭan. So God gave the victory to the Musalmáns.

After these occurrences, Máni'-bin Sinán secretly entered into correspondence with Seyf-bin Mohammed el-Hinái, and played the traitor by violating the compact he had entered into with the Imám. Having collected a force, the two entered Nezwá, the inhabitants of which place were not guiltless of treachery and disaffection, as this was effected with their secret connivance, and with the aid of some of the tribes. On entering Nezwá, they possessed themselves of el-'Akr.

The Imám retained only the fort, which they rigorously beset, but just as they were on the point of breaching the wall, succours arrived from Izkí and Bahlá, including the Benú-Ríyám. These having entered the place to the relief of the Imám, who was overjoyed at their arrival, the enemy's forces



dispersed and many of them were slain. This circumstance served to fortify the Imám's resolution and strengthen his power. He was then advised to destroy the fort of Máni'-bin Sinán, who hearing of the preparation of an army for service against him fled to Fanjá. The Imám's troops proceeded to raze the fort, on which Máni'-bin Sinán proceeded to Maskat, and thence to Lawá, where he joined Mohammed-bin Jafir. The Imám then ordered his army to Bilád-Seyt, at which place Seyf the Hinái had built a fort, after he went forth from Bahlá. The leader of this army was the Sheykh 'Abdullah-bin Mohammed-bin Ghassán, the author of the work entitled the "*Khazánat ul-Akhyár fí be' il-Kheiyár.*"

When the army arrived at Bilád-Seyt, the Hinái fled from the place, and, by order of the commander, the fort was razed to the ground. The Hinái then repaired to the Imám and sought his forgiveness, and all the tribes of 'Omán made their submission.

The Imám soon after assembled a large force with which he proceeded in person, accompanied by the Sheykh Khamís-bin Sa'id of el-Rosták, against Násir-bin Kaṭan of Yankal. After a siege of some days, the place surrendered, and the Imám after placing a Wáli there returned to el-Rosták.

The Imám raised another strong force, in command of which he placed the Sheykh 'Abdullah-bin Mohammed-bin Ghassán of Nezwá, whom he instructed to march to el-Jow. With him he sent also the Sheykh Khamís-bin Rueyshid of Dhank and Háfidh-bin Jum'ah el-Hináí with Mohammed-bin 'Alí of el-Rosták and Mohammed-bin Seyf el-Howkání. On arrival, they gained possession of the place, and leaving Mohammed-bin Seyf as Wáli, the commander proceeded with his forces in the direction of the town of Lawá. For dissensions had broken out amongst the el-Jibúr and, in the strife, Mohammed-bin Jafir had been killed. 'Abdullah took up his quarters at the principal mosque, and his army surrounded the fort, which was held by Seyf, the son of the deceased Mohammed-bin Jafir el-Hilálí. Seyf's brothers and Wazírs, however, had recourse to the Christians<sup>9</sup> at Sohár, where Máni'-bin Sinán el-Omeyrí, also, was then residing. Thence they harassed the Imám's army before Lawá by making night attacks, and they also aided the garrison with provisions and munitions of war. The sons of Mohammed-bin Jafir next wrote to the Wáli proposing terms of peace, but he, aware this was merely a ruse, sent a detachment against them under Mohammed-bin 'Alí, who fell on the enemy before day-break at a place called Mankal, where the southern part of the Fort abuts on the seashore. The millstones of war revolved amongst them, and after a severe engagement Mohammed retired with his forces to the fort of Lawá. They continued to besiege the Fort until Seyf-bin Mohammed sent to them, begging to be allowed safe egress from the place. The Wáli gave him the required guarantee, and he evacuated the fort with his followers, on which



the Wálí entered it. During the siege, the Wálí had received assistance from Náşir-bin Kaţan and the men of the el-'Umúr. 'Abdullah having placed a governor there returned himself to the Imám.

The Imám afterwards raised another army, in command of which he placed Mes'úd-bin Ramadhán and ordered him to lead them to Maskat. He marched until he arrived at the well called el-Rúleh<sup>10</sup> at el-Matreh. There the millstones of death revolved between the Musalmáns and the unbelievers, and God granted victory to the former, who demolished the high towers of Maskat. Many of the unbelievers were slain, after which they sued for peace, which was granted to them by the Wálí, on condition of their restoring all the property of the el-'Umúr, which was in their possession, and also that of the Shi'ahs<sup>11</sup> of Şohár. On their submitting to these terms, the Wálí assured them of safety, and after obtaining from them pledges of good faith, returned to the Imám.

Máni'-bin Sinán meanwhile ceased not to cherish secret enmity against the Imám and to preach rebellion against his Government. So Maddád-bin Holwán asked permission of the Imám to compass Máni's death by stratagem. The Imám having consented, Maddád wrote to Máni', inviting him to come to the fort of Lawá and expressing himself in such kind language that it disposed the other to accede. Now the Wálí of Lawá at that time was Háfidh-bin Seyf. El-Maddád ceased not to ply the 'Omeyri with letters couched in terms of friendly advice, and to adjure him on the true faith not to allow suspicions of evil to enter his heart. Máni' rejoiced at this and placed confidence in Maddád's counsels. He was then residing at the town of Dibbá, from which place he rode into Şohár, where he halted some days awaiting further advices from Maddád. The latter renewed the promises he had made, and fixed a certain night on which he engaged he should have admission to the Fort, on which Máni' rode to Lawá and alighted in the town.

On the appointed night, the Wálí dispersed his forces and caused them to wander about the streets, as if about to depart; it being, however, arranged amongst them that they should concentrate on Máni' from the right and left. Before Máni' was aware of their intentions, the troops had surrounded him from both sides, and he was seized and slain on the spot, and his followers dispersed, those who remained by him being slain.

The Imám next prepared a force, the command of which he gave to 'Alí-bin Ahmed, assisted by his cousins of the Ál-Ya'rub, and ordered him to proceed to the town of Julfár, which is el-Şir.<sup>12</sup> In those days, that place was held by the Persian Náşiruddín with a force of Persians. Ahmed-bin 'Alí proceeded to besiege them in the fort of el-Şir, the Persians actively defending themselves, and some hard fighting occurred. Some of the people of el-Şir sided with the Persians against the Imám's forces. There was



a flanking tower connected by a wall with the fort, and in this tower were stationed a body of the garrison who kept up a fire by night and day. On the sea side there were also two ships of the Christians, which by the fire of their guns protected the fort from assault by the Musalmáns. The latter determined to attack the tower, which they seized by a night assault, and from thence they gained possession of the fort, one of the leaders of the army was placed there as Wálí. More troops came up afterwards, amongst them a body of the el-Dahámish and Khamís-bin Mahzam. There was also another Fort situated on the seashore held by the el-Efrenj.<sup>12</sup> The Imám's army entered this place by day and took possession of it, and besieged those who were in the fort, which they occupied themselves. The power of the unbelievers was humbled, and they sued for peace, which was granted them, and they evacuated the fort, in which the Wálí placed a garrison. Leaving with the latter a portion of his army 'Alí-bin Ahmed, they returned with the remainder to Nezwá. The Imám was rejoiced at his arrival and at the news of the capture of el-Şir.

The Imám next ordered Háfidh-bin Seyf, the Wálí of Lawá, who had a body of el-'Amúr with him, to proceed and build a fort against Şohár, some of the inhabitants of which town had been inviting him to take the place. The Wálí accordingly summoned all in the neighbourhood from the towns of the Benú-Khálid, Benú-Lám, and the el-'Amúr, and a numerous force assembled. The Wálí then marched on Şohár and passed the night in the village of 'Amak. Next day, in the forenoon, he reached Şohár district without being discovered by any of his enemies. This was on the last day of el-Moharram, A. H. 1043 [A. D. 1633]. He encamped in a quarter of Şohár, called el-Bid'ah, and the Musalmáns commenced an attack on the unbelievers. The combat raged fiercely for a time, the Christians keeping up a fire of cannon from the fort. The Wálí then changed his position, the fighting and cannonading continuing. A cannon shot pierced through the ranks of the besiegers until it reached the "Mejlis" of the Wálí and struck Ráshid-bin 'Abbád, who thus suffered the death of a martyr. A fort was then erected by the Wálí's orders, and he took up his position in it. There ceased not to be warfare between them night and day.<sup>13</sup>

After this the Kádhí Khamís-bin Sa'id of el-Rosták proceeded with his followers to the village of Búsher,<sup>14</sup> where he received a message from the Christians asking for peace, which request he granted.

Afterwards he sent on his messengers to Maskat and, having mounted himself, rode to el-Maṭreh, where he was met by the leaders of the Christians, and terms of peace were agreed upon. Khamís thereupon ordered the abandonment of the strong positions he had occupied against them, and allowed free communication to be re-established with the town. In this manner hostilities were avoided.



The Imám next despatched a force against Šúr, which besieged and took that place. A portion of the force went to Keriyát, where the Christians possessed a Fort. The Musalmáns erected a fort there and took that of the Christians. Thus the Imám acquired possession of the whole kingdom of 'Omán excepting Šohár and Maškaṭ.

Meanwhile Náṣir-bin Ḳaṭan continued to make raids into 'Omán every year from el-Ahsá,<sup>16</sup> carrying off cattle and pillaging the country and returning to el-Ahsá. The Imám therefore wrote to his Wálí, Mohammed-bin Seyf el-Howkání, directing him to obtain information of Náṣir's movements, and as soon as he heard of his approach, to intercept him with an army beyond the frontier of 'Omán. The Wálí accordingly collected a force of "Bedú" and "Hadr," and when he heard of Náṣir's approach advanced to meet him. Náṣir hearing of the Imám's army made for el-Dhafreh and entered its fort, the Benú-Yás assisting him. Thence he sent messengers to the Wálí to sue for peace. The Wálí being in straits for provisions, and distant from his supplies, agreed to make peace on condition of Náṣir restoring all plundered property in his possession and paying compensation for what had been continued, after which the Wálí retired with his followers. Náṣir, however, collected the Bedouins of el-Dhafreh and proceeded to attack the fort of el-Jow, of which Ahmed-bin Khalf was Wálí. Náṣir being joined by all the inhabitants, who aided him against the Wálí, laid siege to the fort; but the Wális of el-Báṭineh and el-Dháhireh, hearing of this, sent succours to Ahmed-bin Khalf, and the enemy's forces retired from the district. The chief Wálí then came with an army from Nezwá, and ordered the demolition of all the Forts of el-Jow, except that of the Imám, and the enemies were dispersed. 'Omeyr-bin Mohammed fled to the Christians at Šohár, and others made for the hill pass of Júlfár, where they took to highway robbery and pillaging the districts. The Wális proceeded against them, and some were killed and others fled. The Wálí having seized their camels returned to 'Omán. Náṣir-bin Ḳaṭan then led his followers to el-Báṭineh, and made raids on the camels of the Benú-Khálid and Benú-Lám.<sup>17</sup> They also plundered the women of their ornaments and clothes, after which they retired to el-Ahsá. Soon after, he again invaded 'Omán, and advanced towards el-Báṭineh, in order to pillage that district. The Imám, however, assembled an army to repel him, and placed in command 'Alí-bin Ahmed, supported by Mohammed-bin Šalt el-Ríyámí, 'Alí-bin Mohammed-el-'Ibrí, and Ahmed-bin Belhasan el-Búsherí. They proceeded to the town of Lawá, where they encountered Náṣir-bin Ḳaṭan and his force. An engagement occurred, in which Náṣir was worsted, and fled to Majis, pursued by the Wálí and his followers. Náṣir then made for el-Shemál, and the Wálí rode in pursuit. The first to come up with Náṣir were Ahmed-bin Belhasan, and Murád and Ráshid-bin Hisám, and a few of the



faithful,<sup>18</sup> who overtook him at a place called el-Kharús. This advanced party of the Musalmáns having been assailed by Náşir's force before the main body of the Imám's army came up, they were slain to a man. God alone is Immortal! When the army arrived at the spot, they saw their comrades lying dead, and not a man of Náşir's force was in sight.

About this time Hamíd, *alias* Mohammed-bin 'Othmán, attacked the district of el-Sirr, where Mohammed-bin Seyf el-Howkání was Wálí. Sa'id-bin Khalfán, who happened to be in el-Sirr at the time, demanded an interview with Ibn-Hamíd, and they met at el-Ghabbí, in the mosque of el-Sharí'ah, when Sa'id demanded restitution of the property they had plundered; but the other refused and became still more insolent and audacious, so that Sa'id was obliged to have him imprisoned in irons in the fort of el-Ghabbí. Sa'id then proceeded to el-Rosták and informed the Imám of the seizure of Mohammed-bin 'Othmán at el-Ghabbí. The Imám ordered him to be brought to el-Rosták, and he was accordingly conveyed there in fetters, and remained in confinement for seven months when he died.

The Imám soon after raised another army under command of Sa'id-bin Khalfán, supported by 'Omeyr-bin Mohammed-bin Jafir. This force proceeded with the design of seizing the camel herds of Náşir-bin Kaţan el-Hilálí. Before they reached the spot where the camels were, they were encountered, at a place named el-Sha'ib near el-Dhafrah, by the Benú-Yás, and a battle ensued, in which the leader of the Benú-Yás, Sakeyr-bin 'Isá, and his brother Mohammed with a number of the tribe were slain. On this they sued for peace, which the Wálí granted, and the army returned. The Imám then directed them to proceed to a place called Daghfis, where Náşir-bin Kaţan had herds of camels. They succeeded in capturing these camels, which were made over to the charge of 'Omeyr-bin Mohammed-bin Jafir, but the latter's brother, at the instigation of others, restored the camels to Náşir-bin Kaţan. The latter and his followers ceased not to pillage 'Omán until he became the dread of "Bedú" and "Hadhri," and the people of the desert sought refuge in the villages. On the occasion of one of his raiding expeditions, Náşir halted with his army in the south, and sent a body of his people to close the passes. The Imám sent an army against him under Seyf-bin Málik and Seyf-bin Abul-'Arab. The advanced guard of the Imám's force came suddenly on Náşir's force and, being few in comparison with the latter, they were all slain. Náşir then withdrew to el-Ahsá, and the Imám's army returned.

After this God aided the Imám of the Musalmáns against all wrongdoers, whom he ejected from their habitations and removed with the strong arm. He took pledges from the disaffected and humbled their leaders, crushed the tyrannical, and checked all oppressors. God was on his side and bestowed His grace on him, so that el-Islám was exalted and shone forth,



whilst evil and wrong-doing hid their heads. Justice was extended to all the people of 'Omán, whether "Bedú" or "Hadh'r." There remained only the party of Christians, who held out within the walls of Maṣkaṭ, and these had suffered from war to such an extent that they had become weak, and their power was falling to decay. Their allies were dispersed, and death and slaughter had well nigh done their work on the majority of them.

Then God decreed that the Imám should die, and this event occurred on Friday ten days before the end of Rabí' ul-Ákhir, A. H. 1050 [A. D. 1640],<sup>19</sup> his reign having lasted twenty-six years. All the just were content with, nay devoted to him. He was buried at Nezwá, where his tomb is well known.

**THE IMA'M SULṬA'N-BIN SEYF.** On the same day on which the Imám Náṣir-bin Murshid-bin Málik expired, the Musalmáns elected his cousin the Imám Sulṭán-bin Seyf-bin Málik. This Prince ruled justly, and was active and diligent in the service of God, failing in no respect. He waged war on the Christians, who still remained in Maṣkaṭ, and personally conducted the operations against them until God gave him the victory over them and he took the place.<sup>20</sup> He continued afterwards to carry on war against them by land and sea wherever he found them, and succeeded in taking many of their towns and ships, and enriched himself with much booty taken from them. It is said that he built the fort which is at Nezwá entirely from the spoil of Širr, and it took him twelve years to complete the work. He also constructed the aqueduct of el-Birkeh, which is between Izkí and Nezwá, but nearer to the former place. It is probable that strictures were passed on him as regards his Imámship on account of his engaging in commerce, as he had agents who were known to trade on his account. In his time there were many learned men in 'Omán. Wealth also increased, and the country was prosperous and brilliant, the people gratefully enjoying tranquillity. The harvests were abundant and prices low. He was affable to his subjects and liked by all. He used to walk out without a guard and sit and converse with the people. He would salute all, great or little, slave or free. Thus he continued assiduously to administer the Government until his death, which occurred on Friday morning, the 16th of Thul-Ḳa'deh, A. H. 1090 [4th October, 1680.] His body was interred where the Imám Náṣir-bin Murshid had been buried.

**THE IMA'M BEL'ARAB-BIN SULṬA'N.** They then elected his son Bel'arab-bin Sulṭán-bin Seyf-bin Málik. This prince was generous and beneficent, and the people ceased not to be grateful to him and to extol his virtue. He removed from Nezwá to Yabrin, which he made a flourishing place and where he built a fort. But strife broke out between the Imám and his brother Seyf, and in the course of their contention many of the people of 'Omán, learned men, elders, and pious persons, suffered great troubles. Many



souls went to perdition from following the opinions and advice of the foolish.

The Imám, having gone on an expedition to el-Shemál, on his return was forbidden entry to Nezwá by the inhabitants, on which he went to Yabrín.

**THE IMA'M SEYF-BIN SULTA'N.** The majority of the people of 'Omán then assembled, and conferred the Imámate on his brother Seyf-bin Sultán; but I conceive that most of them entered into the matter from fear of consequences, and that some suffered for refusing to join in the plot.

Seyf then went against his brother, and took all the forts of 'Omán, except Yabrín which he besieged, and fighting continued until Bel'arab died in the castle. His adherents begged to be allowed to quit the place unmolested, and Seyf consented. I imagine that some of the learned continued to regard Bel'arab as Imám up to the time of his death, looking on Seyf as a rebel against his brother.

After that, Seyf subdued all 'Omán and ruled justly, protecting the weak from the strong, and inspiring the tribes of 'Omán and other countries with fear. He made war on the Christians in every country, drove them from their abodes and uprooted them from places where they had established themselves. He wrested from them Bender-Mombásah, Jezíret el-Khadhrá,<sup>21</sup> Kilwah, Battah, and other places belonging to them.

'Omán became very prosperous, and the Imám constructed many aqueducts, and planted date trees and other descriptions of trees. The Imám amassed much wealth, and possessed many male and female slaves, for he was very greedy of wealth. 'Omán was strong and prosperous under his sway, and he went on in this manner until he died at el-Rosták and was buried there. His death occurred on Friday night, three days before the end of Ramadhán, A. H. 1120 [A. D. 1708.]

**THE IMA'M SULTA'N-BIN SEYF-BIN MA'LIK** was then elected Imám and governed firmly and diligently, warring against the foes by land and by sea. He attacked the Persians in several places, and drove them from their possessions. He also built the fort of el-Hazam, and removed from el-Rosták to that place. He expended all the wealth he had inherited from his father, and moreover borrowed lacs from the property of the mosques and religious endowments. He attacked and took el-Bahrein; and neither the people of 'Omán, nor of any other country, ventured to stir against him. At length, he died in the fort of el-Hazam, on Wednesday five days before the end of Jumádí el-Akhir, A. H. 1131 [A. D. 1718], and was buried there.

Thereupon there occurred a difference between the el-Ya'árabeh and the heads of the tribes, who were clannish and touchy. They wished to elect in the Imám's place his son Seyf, who was still of unripe years.

But the men of learning, as well as the daughter of the Imám Seyf,



desired that the Imámate should be conferred on Mohenná-bin Sultán, considering him worthy of the position and powerful enough to maintain it. They were moreover not aware of anything in his character or conduct which should exclude him from reigning. They argued also that the Imámate of a boy was not allowable in any circumstances. It would not be lawful for him to lead the prayers; how then could he be Imám of the country, to govern it, and have power over the property, lives, and honor of the people? When it was not lawful for him to take possession of his own property, how could it be right that he should have charge of the property of God, or of orphans, or of absentees, and others incapacitated for the administration of their affairs?

The Sheykh 'Adi-bin Suleimán el-Thahali perceived that the people favoured the claims of the Imám's son, and though he did not consider himself justified in assisting them in that course, he feared that, as the assembled people were armed, opposition might induce them to use their weapons and lead to bloodshed. Accordingly he wished to silence them and break up the assembly. So he said to them 'Seyf is "Amám" or "before you."' On this, they proclaimed him Imám, and fired the guns to announce the event. The news spread throughout 'Omán that Seyf-bin Sultán was Imám. When, however, the commotion had subsided, and people had quieted down, they brought the Sheykh Muhenná secretly into the fort and elected him Imám. This was in the same month and year in which Sultán-bin Seyf died.

**THE IM'AM MUHENNA-BIN SULTÁN.** The new Imám applied himself to the Government, and the people enjoyed tranquillity during his time. He abolished the custom duties at Maskat, and appointed no agent to reside there, so that the inhabitants made profit by the trade of the place. Prices fell and the harvests were rich. None of the learned refused allegiance to Muhenná. He continued to reign for one year when he was slain. I shall, if it be the will of God, narrate the circumstances attending his slaughter, and the causes of the disturbances which took place in 'Omán and of the condition to which the affairs of its people tended, in a separate book.

### Book VII.

*Account of the Civil Wars in 'Omán and of the state to which the country was reduced. A. D. 1718 to A. D. 1728.*

After the election of Muhenná-bin Sultán, the el-Ya'árabeh and people of el-Rosták ceased not to cherish enmity against him and the Kádhí 'Adi-bin Suleimán el-Thahali and to urge Ya'rab-bin Bel'arab to rise against the Imám; which he at length did, and took possession of Maskat, the Wálí of which was at that time Mes'úd-bin Mohammed-bin Mes'úd el-Šárimí el-Ríyámí. As Ya'rab did not enter Maskat with a force, it is probable the



inhabitants were not guiltless of treason towards the Imám Muhenná. The latter had gone to Felej el-Bazil in the districts of el-Jow, but as soon as he heard this intelligence, he returned to el-Rosták and spared no effort to meet the emergency. He called on the people of 'Omán to aid him against the enemy, but they did not respond to his call and abandoned him to his fate. The people of el-Rosták had besieged him in the Fort. Ya'rab, hearing this, came from Maskat to el-Rosták, and summoned Muhenná to come forth from the Fort, offering him safe-conduct for himself and followers and property. Muhenná reflected on his position: abandoned as he was and unaided by any of the people of 'Omán, he was evidently helpless, and accordingly accepted the proffered terms and came down from the Fort. By this act, his Imámate came to an end. Notwithstanding the promises of security, he was immediately seized, fettered, and placed in the stocks, with one of his companions. Soon after, some of his enemies' servants came, and slaughtered them both as they lay bound and helpless. Ya'rab then assumed the reins of government, but did not aspire to the Imámate, which office pertained to his cousin Seyf-bin Sultán, contenting himself with acting as regent for the latter, who was too young to assume the Government himself. All the Forts of 'Omán surrendered to them, and all the tribes made their submission. This was in the year 1133 A. H. [A. D. 1720.]

Matters went on in this way for a year, after which the Kádhi 'Adi-bin Suleimán el-Thahali proposed to Ya'rab that he should repent of all his misdeeds, his oppression of the Musalmáns, and his rebellion against Mohenná-bin Sultán and seizure of the Government of the Musalmáns. In case of his doing this, Ya'rab would be absolved of the guilt of rebellion, and it would not be necessary for him to make restitution for what he had destroyed; for compensation is not incumbent on one who has repented and received absolution. Ya'rab followed these counsels, on which he was made Imám in the year 1134 A. H. [A. D. 1721.]

THE IMA'M YA'RAB-BIN BEL'ARAB. He then received charge of the Government in his own name and the various forts of 'Omán were surrendered to him. After remaining a few days at el-Rosták, he proceeded to Nezwá, which he entered on the 29th of el-Sha'bán of the same year. The people of el-Rosták were not content that Ya'rab should be Imám, and displayed a preference for the Sayyid Seyf-bin Sultán. They constantly wrote to Bel'arab-bin Násir, the maternal uncle of the Seyyid Seyf-bin Sultán, who was at Nezwá with the Imám Ya'rab. They ceased not to urge Bel'arab until he left Nezwá, on the 7th of Showwál of that year, and proceeded to Bilád-Seyt, where he succeeded in binding the Benú-Hináh to support him by engaging to release them from the restrictions placed on them by the Imám Násir-bin Murshid in the matters of building, carrying arms, &c. He also gave them rich presents. They accordingly took him to el-



Rosták, where fighting went on, until they succeeded in ejecting the Wálí from the place. They set fire to the gate of the Fort, and the whole front of the place was burnt, and many leaders of the Benú-Hináh, as also some chiefs of the Benú-'Adí, were burnt to death. From what I have gathered, it seems one hundred and fifty lives were lost by the fire. Many books also were destroyed on this occasion, such as the "*Bayán ul-Shara'*," "*el-Muṣannif*," "*Kitáb ul-Istikámeh*," "*Mujlibát ul-Tilismát*," of about forty volumes. Many other works were burnt, which were unique in 'Omán. Through this fire a vast treasure was discovered.

When intelligence of what the people of el-Rosták had done reached the Imám Ya'rab, he detached a body of horsemen under the command of the Sheykh Šálih-bin Mohammed-bin Khalf el-Suleymí, and ordered them to proceed to el-Rosták; but after reaching 'Awábí, they were obliged to retreat, not being strong enough to fight. Bel'arab-bin Náṣir then wrote to the Wálí of Maṣkaṭ, Himyer-bin Suleimán-bin Ahmed el-Ríyámí, to surrender that place to them, which he did. The town of Nakhl also was delivered up without a blow. The insurgents then sent forth a detachment under Málik bin-Seyf el-Ya'rabí, who succeeded in taking Semáil without opposition, the Wálí evacuating the place. This was in the month of Thul-Ka'deh of the same year. The Benú-Rúábeh joined Málik, who next marched to Izkí, which he took without any fighting. Ya'rab then marched with his adherents of the Nezwá people and the Benú-Ríyám, attended by the Kádhí 'Adí-bin Suleimán el-Thahálí, and came to Izkí. The Sheykh of that place declared for him, and came out to meet him with offers of hospitality and supplies. For two days he remained writing to Málik-bin Seyf, summoning him to come forth from the Fort. And as he refused to do so after that time, Ya'rab commenced hostilities and fired twice on him with cannon. The detachment of the Benú-Hináh under Šáhib el-'Anbúr<sup>2</sup> of el-Rosták, however, coming up against Ya'rab, his army was scattered, and he, finding himself deserted, returned to Nezwá. The Kádhí 'Adí-bin Suleimán fled to el-Rosták, where the people seized him and Suleimán-bin Khalfán, and bound them to the pillory, where they were slain by some of Bel'arab-bin Náṣir's people, and their bodies were dragged through the streets by the people of el-Rosták. This occurred on the feast of the Híjj in the same year. Šáhib el-'Anbúr then proceeded to Nezwá, and commenced writing to Ya'rab, urging him to come forth from the Fort. Some of the Nezwá people, also, went to him and asked him to evacuate the place, in order to save bloodshed. They did not cease importuning him to this end, until at length he consented, on condition of their leaving him in the Fort of Yabrin and abstaining from molesting him. They entered into a compact with him to that effect, on which he went forth from Nezwá. By this act his Imámate terminated. He proceeded straight to Yabrin, and Šáhib



el-'Anbúr entered the Fort of Nezwá, and firing a salute from all the guns proclaimed Seyf-bin Sultán Imám.

THE IMÁM SEYF-BIN SULTÁN. All the forts of 'Omán were surrendered to him, and all the tribes and towns submitted to his authority. Matters went on in this wise for two months all but three days, when it was the will of God to bring to pass what He had foreseen would befall the people of 'Omán, on account of their fickle and changeable behaviour. For God does not send vicissitudes on a people until they are untrue to themselves. In the trials He sends, he who is steadfast in his religion is distinguished from the backslider and hypocrite. God said those words, "*Do men imagine it shall be sufficient for them to say, 'we believe,' while they be not proved? We proved heretofore those who were before them; for God will surely know those who are sincere, and He will surely know the liars.*"

God then foresaw what was predestined to occur, that the actions of all men should come to light, and the evildoer suffer for his misdeeds, and the obedient be fortified, each being requited according to his good or evil deeds, like as pure gold is tested by fire. It has been said too, "By trial is a man honored or despised."

When it was settled that Bel'arab-bin Náşir should administer the Government as regent, and that Seyf-bin Sultán was Imám, the various tribes and chiefs came to offer their congratulations on this. Bel'arab-bin Náşir on this occasion let fall threats against certain tribes, especially the Benú-Gháfir and the people of Bahlá. It is said when Mohammed-bin Náşir-bin 'Amir el-Gháfirí came with a party of his tribe, the Seyyid Bel'arab uttered menaces against them, on which Mohammed-bin Náşir retired deeply offended, and entered into correspondence with Ya'rab-bin Bel'arab and the people of Bahlá, urging them to rise in revolt. He went also himself to the Bedouins of el-Dhafrah, the Benú-Na'im, Benú-Katab, and the rest.

Bel'arab on his part sent to invite the chiefs of Nezwá to join him, and a large number of them did so, and were received with honor, and desired to give their allegiance to Seyf-bin Sultán. He then sent a detachment under his brother Suleimán-bin Náşir with orders to proceed by Wádí-Semáíl, and bring Ya'rab to el-Rosták. He ordered the Nezwá people to accompany this force, but they ceased not to ask the chiefs of el-Rosták to intercede with him to excuse them from this duty until he consented. The detachment proceeded as far as Fark, where they passed the night, and the people of Nezwá sent them food and refreshments. Suddenly, they heard the firing of cannon from the Fort of Nezwá, and enquiring what had happened, were informed that Ya'rab-bin Bel'arab had entered the Fort. Thereupon they returned to Izki, where Suleimán-bin Náşir seized the Fort and remained in the town. Bel'arab-bin Náşir had meanwhile despatched a second detachment against Ya'rab by way of el-Dháhireh, but on their



reaching Bahlá, the people of that place seized and imprisoned them there. A third party, which was sent to Wádí Beni-Gháfir, was defeated and retired to el-Rosták.

Ya'rab, on the other hand, sent a detachment with two guns against Izki. When they arrived before the place, they opened fire on the Fort, but were worsted and retired to Nezwá after losing several men. He then sent another force against Izki. They halted for a day on the west side of the town, and the following morning saw them in retreat on Nezwá without having struck a blow. A third force, also, was sent which occupied the western side of Izki, and bombarded the Fort with cannon for about ten days, after which Málik-bin Náşir arrived at Izki from el-Rosták, and, having been joined by the garrison, made a sortie on Ya'rab's troops, but was repulsed. The Bedouins of Ya'rab's army attacked and plundered Suddá and the quarter named el-Rahhá of Izki, and burned the abode of Himyer-bin Manír outside el-Rahhá. The leaders of Ya'rab's force next attacked el-Yemen tribe, but were defeated, and one of the commanders, Mohammed-bin Sa'id-bin Ziyád of Bahlá, was killed.

Málik-bin Náşir, having been told that the el-Nizár<sup>e</sup> had joined Ya'rab's men in the attack on the el-Yemen, sent for the Sheykhs of the former clan and placed them in irons in the chief mosque. He then sent to the people of el-Sharkiyeh, and a large army of them came to his aid. The Benú-Hináh also came in large numbers, and the whole having united at Izki attacked Ya'rab's force. The drums and a small body of men were sent out by the side of el-Manzaliyeh, and the main body marched out from the directions of el-'Atab on Friday at sunset. A great battle was fought, in which the musketry rattled like peals of thunder, and swords flashed like lightning. The result was the defeat of Ya'rab's army. The slaughter was great: from what I have heard, three hundred men fell on both sides, but God knows!

Náşir-bin Málik then marched with his followers on the town of Manh, and a detachment attacked Faleyj of Wadí el-Hajar, killed many of the inhabitants, and plundered all that they found in the place. They then burned down the houses of Zakit and Mahyúl, after which they reached Manh, where they plundered the "Hujreh" of Ma'mad, burned the houses, and slew numbers of the inhabitants, who were dispersed in all directions. They next marched on Nezwá, and pitched their camp at the mosque of el-Makhass of Farq, and laid siege to Nezwá. They destroyed the cultivation, and burned many sugar-cane fields of el-Heylí and el-Khadhrá. They also burned the houses of Farq, and committed depredations everywhere.

The people of Nezwá and Ya'rab's followers sallied out against them, and, after an engagement in which several were slain on each side, both armies fell back to their former positions. After this, there was fighting



every day: many were killed and the people of Nezwá experienced much suffering.

At length, a great battle was fought, the like of which we have not heard of the forces of. The forces of Málik were well nigh put to flight only; when half of them had fled, the remainder were unable to escape, as the enemy had surrounded them like a ring. Despairing of escape from slaughter, they made a desperate rally and fought with fury. The Nezwá men, on the other hand, thought victory secured, and many commenced to plunder, each one trusting to his comrades to keep watch. In this situation, a body of Málik's men made a determined attack on them and routed them. In their flight they lost numbers in killed and wounded. The enemy pursued as far as a place called Jannúr el-Khoseh, near the bend of el-'Akr, slaying and capturing. A great number of the inhabitants of Nezwá fell on that day. Bel'arab then returned to his camp, and for some time desultory skirmishing daily occurred. At length, Málik marched out with all his force, excepting only a few, whom he left to guard his camp, and advanced as far as Hinát of el-'Akr. His plan was to attack that place from the enclosed garden of Showeykh, making loopholes in the wall for musketry. The people of Nezwá, however, sallied out against him, and the millstones of war revolved amongst them for an hour of that day, at the end of which Málik-bin Náşir was slain, and his forces were routed and forced to retreat to their camp. They remained encamped there, but were much weakened by the fall of Náşir. Fighting nevertheless continued between them and the people of Nezwá, until Mohammed-bin Náşir the Gháfirí arrived with his force from el-Gharbíyeh, after having fought several severe battles at Wádí el-Şaḡal and in el-Jow, and at Dhank and el-Ghabbí. I refrain from describing these actions to avoid prolixity, and as moreover they are well known.

Mohammed-bin Náşir now ordered an attack to be made on a body of the enemy in el-Makhádh. His forces accordingly attacked and surrounded them, and the fire of matchlocks was sustained from morning till night. When night fell, Mohammed-bin-Náşir ordered an assault to be made on them from the el-Şaḡal side along the Wádí leading to Farḡ. The attack succeeded, and morning found the place completely evacuated, not one of the enemy being left in it, all having fled. At this time, the Seyyid Ya'rab was ill. Mohammed-bin Náşir then returned to Nezwá, where he remained a few days, after which he ordered his army to march on el-Rostáḡ.

The siege of Nezwá had lasted two months all but six days.

On arrival at el-Rostáḡ, Mohammed-bin Náşir encamped with his entire force at Felej el-Sharát. His men desired to assault a tower in which 'Alí-bin Mohammed Şáhib el-'Anbúr had ensconced himself; but Mohammed-bin Náşir restrained them until Şáhib el-'Anbúr and his men commenced hostilities, when the assault was ordered. A severe fight ensued, in which



Sāhib el-'Anbūr and many of his people were slain and the remainder routed. Mohammed-bin Nāṣir then returned to Felej el-Sharāt, and, on the following day, entered Felej el-Madrā, where Bel'arab-bin Nāṣir met him as a suppliant. Mohammed agreed to make peace on condition of his surrendering the Fort of el-Rostāk, and all other Forts in his possession.

They accordingly proceeded together to the Fort of el-Rostāk. Now Bel'arab meditated treachery towards Mohammed-bin Nāṣir, but the latter, shrewd and cautious, declined to enter except with his men, and when all had entered, he entered also. As soon as they were in, his troops commenced to pillage the town, and they abducted so many children that they were sold into foreign countries. This treatment was the requital of their evil doing and of their treatment of the Kādhi of the Musalmāns 'Adī-bin Suleimān. "*Verily God will not change His grace which is in men, until they change the disposition in their souls by sin.*" The death of Ya'rab-bin Bel'arab occurred whilst Mohammed-bin Nāṣir was at el-Rostāk, thirteen days before the expiry of Jumādi el-Ukhrā, A. H. 1135. [A. D. 1723]. The people of Nezvá, however, fearing the enemy would attack them, concealed the fact for nearly fifty days.

Mohammed-bin Nāṣir ordered Bel'arab to be imprisoned in fetters, after he had commanded him to surrender all the Forts in his possession. There remained only Maṣṣaṭ and Birkeh\* in the hands of the Benú-Hināh. Mohammed-bin Nāṣir remained at el-Rostāk and proclaimed Seyf-bin Sultān Imām.

The people of el-Rostāk fled to the hills and valleys. I have heard that in a cavern, in the direction of the district of Mahālil, were found the bodies of about one hundred women and children, who had perished of thirst, afraid to return to el-Rostāk lest they should be carried off and sold into slavery.

Three days after he took el-Rostāk, Mohammed-bin Nāṣir was joined by a re-inforcement of about fifteen hundred men of the Benú-Ḳoleyb and Benú-Ka'b, armed with matchlocks and spears. There also arrived Rahmeh-bin Maṭr-bin Rahmeh el-Hawalī with about 5000 "Bedú" and "Hadr," amongst whom were some who did not understand Arabic<sup>9</sup> and were unable to distinguish friend from foe.

Khalf-bin Mubārik, known as el-Ḳaṣīr [or the Dwarf], a native of el-Ghashb, who was not at el-Rostāk during the fighting, took possession of the Forts of Birkeh and Maṣṣaṭ, having with him the Benú-Hināh. Mohammed-bin Nāṣir sent 'Alī-bin Mohammed el-Kharúsi as Wālī of the Fort of Barká, but he was slain and his followers returned to Mohammed-bin Nāṣir at el-Rostāk. The latter thereupon directed the whole of his forces on Barká. So Rahmeh-bin Maṭr el-Hawalī marched with his contingent; also Hamzah-bin Hammād el-Ḳoleybī with his men, and Ahmed-bin 'Alī el-Gháfirī with the force contributed by Mohammed-bin Nāṣir.



Likewise Mohammed-bin 'Adi-bin Suleimán el-Thahali, with the men he had brought from el-Šir. Also Mohammed-bin Násir el-Harrási with his clan. All these proceeded, each in command of his own division, until they reached Mesna'a. There a letter arrived from the Benú-Hináh, addressed by Kar'a el-Darmaki to Rahmeh-el-Hawali saying: "Do not come further against us, as we are coming to meet you," in the sense of a threat. When Rahmeh read the letter, he understood its meaning, and at once ordered an advance on Barká, sending scouts ahead to that place. The latter finding Kar'a and his followers advancing against Rahmeh, returned with the intelligence. Rahmeh encountered them at a place called el-Ḳásim. Ḳodheyb el-Hawali charged the enemy on horseback, followed closely by the remainder of the force. Ten of the enemy were killed, and Kar'a and his followers were routed. Ḳodheyb received a slight wound. Rahmeh then moved his men eastward, and halted at el-Hifri,<sup>10</sup> which belongs to the el-Jibúr, to allow his men rest and refreshment. Thence he sent out his scouts, who reported that Khalf-bin Mubárik el-Ḳaḡir had moved by land and sea with an innumerable force. Those on the side of Mohammed-bin Násir amounted to 5000 men, "Bedú" and "Hadr" of various tribes. The rival armies encountered to the west of Barká, and a severe contest ensued. Rahmeh's men had cannon, with which they fired on the vessels which were on the sea, and forced them to stand further out. The battle ended in the defeat of Khalf-bin Mubárik, who mounted a camel and fled. His forces were broken and pursued by those of Mohammed-bin Násir, who slew and captured many, until finding no refuge from slaughter many plunged into the sea, and endeavoured to gain the ships. These, however, had put to sea, and they failed to reach them. The victors meanwhile kept up a fire on them until all perished. The bodies were then stripped of arms and all else on them. When the dead bodies were thrown up by the sea, they found the number of killed amounted to 1012 men. The remainder of the fugitives were pursued until they entered the Fort of Barká. The adherents of Mohammed-bin Násir then encamped by the side of the hill at Barká, and laid siege to the Fort. Four days afterwards, the garrison embarked in the ships, and went to Maskat, leaving only a few men in the Fort, the town being empty. The army of Mohammed-bin Násir then returned to el-Rosták, and Rahmeh returned to his own country.

Mohammed-bin Násir remained a time in el-Rosták, where he had so severe an attack of small-pox, that fears were entertained for his life. When he recovered, he ordered an expedition to proceed to Yanḡal. He placed in el-Rosták as Wálí Mohammed-bin Násir el-Harrási, and with him in the Fort he left the Bahlá chiefs and Sinán-bin Mohammed-bin Sinán el-Mahthúr el-Gháfiri.

Mohammed-bin Násir and Seyf-bin Sultán then marched carrying



with them Bel'arab-bin Náşir and all the Ya'árabeh in fetters," and proceeded until they reached Maḡaniyát. Mohammed-bin Náşir's stay at el-Rosták had lasted about two months. On arrival at Maḡaniyát, he sent to the tribes of Dháhireh and 'Omán and to the Benú-Yás, summoning them to his aid. They obeyed his call, and a large army of about 12,000 men assembled under him. His camp was at Felej el-Manádereh, on the Yanḡal side. On summoning the people of the town to surrender the Fort to him, they failed to do so, and returned him no answer. In the morning, he moved his camp, intending to occupy the high ground, above the source of the el-Mohidith stream of el-Baṡḡá. The Benú-'Alí and their allies of Yanḡal opposed him, and a severe conflict occurred, in which many of the Benú-'Alí were slain, notably the son of their Sheykh Suleimán-bin Sálím. On Mohammed-bin Náşir's side, Sálím-bin Zíyád el-Gháfirí, Seyf-bin Náşir el-Shakeyli and one other were wounded.

Mohammed-bin Náşir then encamped on the heights above the fountain head of the el-Mohidith stream, and besieged the garrison, firing on them from guns and matchlocks. Another engagement was fought, in which many were killed. On the side of Mohammed-bin Náşir there fell the Wálí of Dhank, Mohammed-bin Khalf el-Kuyúdhí, and one of his cousins. They then cut off the supply of water by breaking up the aqueduct, on which the garrison accepted terms, and agreed to surrender the Forts. Intelligence next reached Mohammed-bin Náşir that Sa'id-bin Haweyd had entered el-Seleyf with his followers and joined the el-Şúáwafeh, who sided with the Benú-Hináh. He accordingly directed his army on el-Seleyf, and on arrival there sent a message to Sa'id-bin Haweyd and the people of el-Seleyf, inviting them to make their submission, but they declined. A number of the el-Şúáwafeh of Ten'am, however, joined Mohammed-bin Náşir, and tendered their allegiance. He then attacked the Fort of the el-Muráshíd of el-Seleyf, and overturned the walls, burying under the ruins all the men, women, and children, who were within the place. Sa'id-bin Haweyd then requested safe passage for himself and his followers to his own district. Mohammed-bin Náşir acceded to his request, and not only allowed him free egress, but supplied him with provisions for his journey. After this, there only remained at el-Seleyf the Forts of the el-Şúáwafeh and the el-Manádereh. The latter seeing what had befallen the el-Muráshíd, made their submission to Mohammed-bin Náşir, who pardoned them and suffered them to remain unmolested in their stronghold.

The el-Şúáwafeh, on the contrary, held out, so Mohammed-bin Náşir continued to besiege them, cutting down their date trees, and slaying them daily. He dismissed his Bedouin auxiliaries, retaining only the Benú-Yás and the "Hadhri" tribes. When the siege had lasted over two months, the garrison agreed to demolish the Fort with their own hands; on their doing



this, peace was concluded. Meanwhile Khalf-bin Mubárik el-Kašir, seeing Mohammed-bin Nášir engaged in the siege of el-Seleyf, laid siege to el-Rosták. Now Sabá' el-'Amúri had previously taken the Fort of Šohár.

When Šinán-bin Mohammed el-Mahtúr el-Gháfirí, the warden of the Fort, was killed, Mohammed-bin Nášir el-Harrási and his followers came forth from the Fort of el-Rosták, and, Khalf-bin Mubárik entering, the place was surrendered to him.

Sabá' el-'Amúri had meanwhile taken the Fort of Šohár, and Mohammed-bin Nášir found himself unable to return from el-Seleyf and march to the relief of el-Rosták and Šohár, for fear his enemies in el-Dháhireh should become too strong for him.

Khalf el-Kašir then moved against the Fort of el-Hazam, the Wálí of which was 'Omer-bin Šálih-bin Mes'úd el-Gháfirí. He besieged the place, and diverted the course of the stream which supplied it with water. He then sent a message to the Wálí, offering safe passage for him and his men, on condition of their evacuating the Fort. The Wálí refused, and wrote to Mohammed-bin Nášir to inform him of what had occurred, and that they had no water except a small quantity in a cistern. Mohammed, accordingly, having made peace with the people of el-Seleyf and razed their Fort, proceeded to el-Hazam with an innumerable army, and when he reached that place, fell upon Khalf's forces. After many had been slain, the latter took to flight, leaving their arms, ammunition, and provisions behind. Mohammed-bin Nášir then returned to el-Dháhireh without visiting el-Rosták, his object being Bilád-Seyt. Having assembled a numerous force of "Bedú" and "Hadr," he marched from el-Dháhireh to Bilád-Seyt. The inhabitants refusing to comply with his summons to submission, he laid siege to the place, and his men having assaulted, slew many of the people.

He next attacked el-'Aridh, which belonged to the Benú-'Adí, and took that place, and also Ghamar. The uplands of the Benú-Hináh fell into his hands, and none of that tribe remained in them. Some were slain, and those who asked quarter were sent away in safety. In the attack on Bilád-Seyt, about ten of Mohammed-bin Nášir's men were slain and several wounded. He then ordered his army to Nezwá, where he remained about six months, during part of the winter, until harvest time. Having summoned the people of the Manah [or Manh] district to submit to him, they refused, so he sent a force against them which surrounded them, and cut down their date trees at Felej el-Fikein and Jarr-'Alí, and, when their property was destroyed, they made their submission.

Mohammed-bin Nášir then returned to el-Dháhireh, and, halting at el-Ghabbí of el-Sirr, busied himself raising a fresh army, until he had collected a large number of "Bedú" and "Hadr." He ordered the people of el-Dháhireh



to convey the fresh dates to el-Hazam, and with them he sent the people of Wádí Bení-Gháfir and their belongings. He then set out with all his forces for the settlements of the el-'Awámir in el-Sharkīyeh. He was met by the el-'Awámir and the *Al-Wahibeh*<sup>12</sup> Bedouins and the Benú-Hináh, and a fierce battle took place, in which Mohammed-bin Násir's followers were well nigh put to flight; but they rallied and stood firm, and eventually the Benú-Hináh<sup>13</sup> were put to flight, and a great number of them was slain. The pursuit was kept up until they entered the Hujreh of el-'Akil. Mohammed-bin Násir and his followers returned in triumph to Yabrin, accompanied by the Seyyid Seyf-bin Sultán. Mohammed-bin Násir then returned to el-Dháhireh, to recruit his forces, and, being joined by a large number, returned to Nezwá. He collected all the people of Nezwá, and Izkí and Bahlá, also the Benú-Riyám, and marched with them to Seikam. Thence he sent to summon Sa'id-bin Haweyd el-Hináwí, and the followers who had joined him from el-'Akir and el-Gháfát, and, on their refusal to submit, besieged them. Sa'id-bin Haweyd then passed out, and proceeded through el-Dháhireh to Şohár, in order to raise men there and at Yanqal, for the people of the latter place had broken the truce. A large force joined him, on which he returned to 'Amlá and drew in his forces. He collected many of the Benú-Hináh from Wádí el-'Ulá and all their villages. When he reached Felej el-'Aishí, he meditated an attack on Mohammed-bin Násir and his followers. Sa'id-bin Haweyd had been away collecting forces for seven months and seven days, and Mohammed-bin Násir, fearing he might fall on him unawares, had distributed scouts throughout the districts, and these brought him the intelligence of the advance of Sa'id with a large force. Mohammed ordered his troops to intercept him ere he reached the district, and they accordingly met the advancing foe at the entrance of el-Gháfát. A great battle was fought, in which Sa'id-bin Haweyd el-Hináwí was slain, and amongst those of his adherents who fell was Ghaşn-el-'Alawí, chief of Yanqal. The total number of Sa'id's followers slain was two hundred, the remainder dispersed. Mohammed-bin Násir ordered recitations to be pronounced in every district of Bahlá and Nezwá, and the towns of el-Dháhireh to celebrate his victory.

His followers dragged the corpse of Sa'id-bin Haweyd to the Fort of el-Gháfát, in which were his family, children, and followers, expecting that on beholding the sight, they would surrender; but they refused to do so. The siege was therefore continued for two months longer, when the garrison, having eaten all their cattle, ran short of provisions. At this time Mubárik-bin Sa'id-bin Bedr commanded the forces of Mohammed-bin Násir, who after the battle had returned to Yabrin. So, when their provisions were exhausted, and many had been slain, and their property destroyed, the garrison were granted terms on condition of their demolishing the Fort.



This they did with their own hands, on which they were suffered to depart in safety.

The Fort of el-'Aķir continued, however, to hold out.

Mohammed-bin Nášir then dismissed Mubárik-bin Sa'id-bin Bedr, and appointed in his place Rášhid-bin Sa'id Rášhid el-Gháfiri, who continued the siege of el-'Aķir. He had under his orders the men of Bahlá, Nezwá, Izki, and el-Dháhireh, and also the Benú-Gháfir, and Benú-Riyám. They so closely invested the place, that not a soul could enter or leave it. When the provisions were exhausted, the garrison sued for peace, which was granted, the terms being the demolition of their Fort. They were accordingly obliged to demolish the walls, after losing all they possessed. There remained to them neither date trees nor water-courses, and they had consumed the whole of their cattle. So under these conditions they were granted peace and safety of their persons. After which the troops returned, each man to his native place.

Mohammed-bin Nášir next prepared another force of "Bedú" and "Hadr," and marched on the towns of the el-Habús of el-Sharkíyeh, namely, Madheybí, and el-Rowdheh. At the former town, they encountered the army of Khalf-bin Mubárik el-Qaşir, consisting of the el-Habús and others of the Benú-Hináb. In the battle which ensued, Khalf-bin Mubárik was defeated and forced to take refuge in the "Hujreh" of el-Madheybí. Mohammed-bin Nášir besieged them, and began to cut down the date trees, on which they sued for peace and quarter. Mohammed acceded, not knowing that Khalf-bin Mubárik was with them in the "Hujreh." Afterwards a certain person came and informed him that Khalf was in the place, but it did not seem good to him to break the terms of peace. Khalf then fled from el-Madheybí, and Mohammed-bin Nášir pursued him with his army until he reached Ibrá, which place Khalf entered, not imagining that Mohammed-bin Nášir would pursue him so far. He abode with the el-Harth,<sup>14</sup> to whom Mohammed sent summoning them to submit themselves to him, and to eject Khalf from amongst them. On their refusing to do so, he made daily attacks on them, cutting down their date and other trees, and destroying their water-courses. Finding themselves powerless to cope with Mohammed-bin Nášir, they secretly sent away Khalf from amongst them. The latter who was head of the whole of the Benú-Hináb, proceeded to Maskat. After his departure, Mohammed-bin Nášir made peace with the el-Harth, granting them an amnesty, and retiring from the place. The whole of el-Sharkíyeh submitted to him. He then returned to Yabrin, and tarried a space at that place, which was his favourite residence.

He next went to el-Dháhireh and collected a numerous force there, with which he marched westwards, not one of his followers knowing whither he purposed to proceed. Passing through the districts of el-Na'im,<sup>15</sup> he col-



lected men from that tribe and the Benú-Yás, and led them to Nejd el-Jezi, traversing the district of the Benú-Koleyb, some of whom joined him. He then passed into the sea-board tract of el-Báṭineh, causing terror to the people of Šohár, without, however, attacking them. He then marched eastward. The inhabitants of Felej el-Howásineh were alarmed lest he should destroy their valley. His troops seized and ate all the camels and cattle they found. Some amongst them had no conception who were their friends and who their enemies. Khalf-bin Mubárik having received intelligence of Mohammed's movements, encountered him at Afláj-'Ar'ar. A severe contest ensued, and Khalf's followers took to flight, and he himself was shut up in a house. Mohammed-bin Náṣir and his men went in pursuit of the flying enemy, not knowing of Khalf's being in that house. The latter, on his part, imagined that Mohammed satisfied with his victory had left him. Mohammed-bin Náṣir then entered el-Rosták, and commenced destroying the water channels, and writing to the people, summoning them to submit. As they refused, he destroyed the aqueducts of el-Meyser, Bú-Tha'lab, and el-Hammám, and cut down some date groves. The people of el-Rosták, being unable to sally forth to oppose him, at length thought of making their submission.

Mohammed-bin Náṣir now received intelligence that Ráshid-bin Sa'id el-Gháfír had seized the Fort of Maḵaniyát, the Wáli of which was Mubárik-bin Sa'id-bin Bedr. This was caused by Ráshid's jealousy of Mubárik on account of the preference shown for him by Mohammed-bin Náṣir. The latter on hearing the news ordered his forces to march on el-Rosták, after having destroyed its water-courses. Meanwhile 'Alí-bin Náṣir-bin Ahmed el-Kelbání, went to Ráshid-bin Sa'id, and by his advice induced him to make over the Fort to himself, guaranteeing that Mohammed-bin Náṣir would not punish him. So 'Alí-bin Náṣir took charge of the Fort until the arrival of Mohammed-bin Náṣir, who left Mubárik there as Wáli, with the tribe el-Hawátim, and himself returned to Yabrín, where he remained for a considerable time. Thence he proceeded with his attendants to Nezwá, and summoned the chiefs of tribes and learned men from the east and from the west of 'Omán. A great number of these having assembled, he demanded of them that he should be excused from waging wars, and administering the affairs of the Musalmáns, and that they would appoint whomsoever they pleased to govern for the Seyyid Seyf-bin Sultán. However, the Kádhí Náṣir-bin Suleimán-bin Mohammed-bin Maddád, and 'Abdullah-bin Mohammed-bin Rushí-bin Maddád, who was Wáli of Nezwá fort, and the chiefs of tribes who were present, would not accept his resignation. They closed the gates of the Fort of Nezwá and el-'Akr, allowing none to enter or depart. All that day and night they ceased not to apply themselves to adjust the matter, until near morning they elected Mohammed-bin Náṣir Imám as a measure of precaution.



THE IMÁM MOHAMMED-BIN NA'ŞIR-BIN 'ÁMIR EL-GHA'FIRÍ. The guns of the Fort of Nezwá were accordingly fired, and a proclamation was issued announcing the Imámate of Mohammed-bin Náşir and offering honorable treatment and security to every tribe, whether "Yemen" or "Nizár," "Bedú" or "Hadhr," which should enter Nezwá to visit him.

This was on Saturday, seven days before the expiry of the month of el-Moharram, A. H. 1137 [A. D. 1724.]. The Imám remained at Nezwá to lead the prayers on the following Friday, after which he removed with his attendants to Yabrin, and, having dismissed his forces, tarried there a space.

Hearing that Máni'-bin Khamís el-'Azízí had attacked el Ghabbí, taken its Fort, plundered the bazar, and committed other depredations, he proceeded to that place, and scaled the Fort wall with only six followers. He gained the upper part of the Fort before the garrison were aware of his presence, and when they discovered him, they fled in terror, one of Máni'-bin Khamís's slaves being slain. In this manner he captured the Fort, and having appointed a Wálí, returned to Yabrin.

Soon after, Muhenná-bin 'Adí el-Ya'rabí with 'Ámir-bin Suleimán-bin Bel'arab el-Riyámí and Suleimán-bin Himyer-bin 'Alí el-Ya'rabí attacked and took the magazine of el-Birkeh. On hearing of this, Mohammed-bin Náşir proceeded against them, and sent to the Kádhí Náşir-bin Suleimán and the Wálí 'Abdullah-bin Mohammed, desiring him to join him with a force from Nezwá at Birkeh. He himself did not go to Nezwá. With the few soldiers and attendants he had with him, he attacked the enemy in the forenoon and put many to the sword. He then advised them to retire, and restore what they had taken from the magazine, but they refused and fought against him. They held the Mesjid el-Sharí'eh above el-Birkeh and the hill to the last, and broke up the water-course. Mohammed-bin Náşir constructed a tower in the Mesjid below el-Sharí'eh el-Birkeh on the lower hill. They kept up a fire of matchlocks on either side and one of the Maghribí<sup>16</sup> horsemen of Mohammed-bin Náşir's force was killed, and one wounded. He then ordered his men to attack the enemy, who fled in disorder, and Náşir-bin Bel'arab el-Riyámí and 'Alí-bin Şálih, the chief of Kemeh, were made prisoners. This happened before the reinforcement from Nezwá had come up. Mohammed then ordered the dates to be conveyed to Yabrin, and returned himself to Nezwá, taking up his abode in the mosque of el-Ghantaḡ. He had intended to make war on the people of Tenúf,<sup>17</sup> but God saved them from this, and they met him and made promises that they would not act treacherously by him, on which he became reconciled to them. He then ordered all who owed allegiance to him in 'Omán to assemble; and accordingly, a large number having collected, he marched with them from Nezwá purposing to proceed to Dhank to arrange for the return of



the Washáhát to their own district, and to rebuild for the people of Dhank the Fort which he had destroyed when they were in allegiance to Khalf-bin-Mubárik. The *Al-'Azíz*, however, demurred to their return and to the rebuilding of the Fort. This tribe having collected some of the Bedouins and their own adherents, resolved to fight him and those of the *el-Washáhát* with him. The encounter took place at Dhank, and the *Al-'Azíz*, discovering their inability to cope with him, dispersed. *Máni'-bin Khamís* having gone to Seneyneh to the *el-Na'im*, Mohammed went in search of him with a small body of his followers mounted on horses and swift camels, and coming on them unawares, made prisoner *Máni'-bin Khamís* and returned to Dhank.

On his return towards *el-Ghabbí*, he passed by the water-courses of the *Al-'Azíz* Bedouins, who had plundered the bazar of *el-Ghabbí*, and destroyed them, after which he went on to *el-Ghabbí*, and remained there until all those of the tribes of *el-Dháhireh* who were willing had assembled. He then proceeded to *Yabrin*, and after a short stay there came to *Nezwá*, and abode in the house of *el-Mazra'* until he had collected a force. He then went to *Izki*, and gathered men from that place and also from all *el-Shar-kiyeh*. The *Benú-Rúáheh* were alarmed at his proceedings.

He next proceeded to *Semáil* and ceased not to admonish the *el-Bekriín* and people of *el-Hílí* and the tribe of *'Akkásheh*. The people of *el-Hílí* and the *'Akkásheh* having made peace with him and submitted, he sent them to the *el-Bekriín* to bring them to terms. As they were unable to prevail with the latter tribe, Mohammed-bin *Náşir* ordered an attack to be made on them on a dark and rainy winter's night, amid thunder and lightning. They did not perceive him until he had gained the top of the wall, where a watchman was posted. He asked the latter, "For whom are you watching?" He replied, "fearing lest Mohammed-bin *Náşir* should attack us." "This," he rejoined, "is Mohammed-bin *Náşir* at your side." Those in the "*Hujreh*" then fled, and most of them were permitted to go forth unmolested. There only remained to be taken a tower and some upper rooms, in which were *Bekr* and his sons and cousins. A fire of matchlocks was kept up upon these until they were slain to the last man. Of Mohammed's followers four were slain, one of whom was a slave of his, named *Bakhít el-Núbí* [the Nubian], whom he had placed over all his slaves. He fell from a matchlock bullet. The "*Hujreh*" was razed to the ground. *Semáil* now paid up three years arrears of *zekát*. Before this the *Al-'Omeyr* had done much harm in the place, and had appropriated the property of absent persons. Mohammed-bin *Náşir* therefore restored all property to the rightful owners. He imprisoned the *Owlád Sa'id-bin 'Alí* and razed their "*Hujreh*" to the ground.

After that, Mohammed-bin *Náşir* directed his forces on *el-Heyl* in *el-*



Báṭineh, to intercept Khalf-bin Mubárik el-Kaṣír in his march from Maṣkaṭ to el-Rostáḳ. He with his slaves patrolled the road as far as el-Ghobrah. Khalf-bin Mubárik, however, having ascertained that Mohammed had closed the road against him, and not being sufficiently strong to encounter him, remained at Maṣkaṭ, and placed sentries on the roads and walls. Mohammed-bin Náṣir remained at el-Heyl for about half a month, during which time the el-Ma'áwal tribe came to terms with him, but subsequently broke faith.

He then returned to Semáil, and taking with him men of that place proceeded against the Bedouins of 'Ámer Rabí'ah and 'Al-Sa'ali, and those of the dwellers in el-Báṭineh comprised under those names. He was himself mounted on a mare and armed with spear and scimitar, with which he struck right and left, hamstringing their camels, to prevent their carrying them away. Coming on a body of his enemies, he slew their men, on which the women, taking him for Khalf, cried out, "Quarter! O Khalf-bin Mubárik! we are in allegiance to you." He, however, redoubled his efforts in slaying them, riding in front of his men, so that none kept up with him save those on horseback or on swift camels. The Seyyid Seyf-bin Sulṭán was with him; indeed he was never separated from him in all his expeditions. After this, he returned to el-Hazam, and after remaining there a few days went to Sení in Wadí Bení-Gháfir, where he remained a short time, and dismissed all his followers, except the guard and his personal retainers. He next went to el-Ghabbí and, after spending a few days there, returned to Yabrin, which was his chief residence.

At this time, the Bedouins had so infested all the roads of 'Omán, plundering and murdering, that people could only travel in large parties. The chief offenders were the 'Al-Wahíbeh, who had a chief whom they called Bú-Kharḳ. Mohammed-bin Náṣir assembled them, with all their families, camels, and flocks, and commanded them to encamp round Yabrin. This he did, in order to show his resentment towards them: and he kept them so until their camels and flocks perished, they being powerless to resist him.

On the 11th of the month of el-Hijj, he issued forth with his followers in search of the 'Al-Wahíbeh. He destroyed their settlement of el-Sadeyreh, and slew all of them who were in that place. The rest fled to the low lying sands of 'Omán and its desert tracts, where no water is found, imagining he would be unable to reach them there, as the "Hádh" Arabs had little knowledge of the routes of those localities, and it would be difficult for them to find the way to their haunts. But Mohammed-bin Náṣir followed them even there, and killed thirty-six of their chief men, and made prisoners of ninety-five. He also killed their camels and other cattle, and carried the prisoners bound with cords to Yabrin. But Abú-Kharḳ escaped to Maṣkaṭ and joined the Benú-Hináh. Mohammed-bin Náṣir kept the prisoners in



fetters at Yabrín until they all died. He remained at Yabrín some months after this. Abú-Khark then sent a message to Mohammed-bin Náşir, saying that in future he would not molest any one, nor commit any depredations. And after those occurrences, from that day to this, we have not heard of any one being robbed or ill-treated on any of the roads of 'Omán, from the east of it to the west.

Mohammed-bin Náşir then ordered a general levy of all in allegiance to him in 'Omán, from east to west. An immense force accordingly gathered round him at Yabrín, the number of which God only knows. He sent to the districts of the Benú-Hináh of Wálí el-'Ulá, and el-Heyl, and Şamm, and 'Omlá. All the Benú-Hináh submitted and none opposed him. He then proceeded to Yankal, and having encamped on the high ground, sent a summons to the garrison to surrender the Fort to him. They, however, refused and prepared to resist. One night, an inhabitant of Yankal named 'Aşám came forth, and secretly made terms for himself, saying only, the place was not in his hands. Mohammed-bin Náşir replied, "Counsel your men to submit, in order to avoid bloodshed." They, however, would not follow his advice and continued to resist. Now the house of 'Aşám was on the wall, in which was a small gateway. 'Aşám admitted Mohammed and his followers by this gate into the town, and two of the inhabitants were slain. They then begged for quarter, which Mohammed granted, but he imprisoned their Sheykhs and carried them off to Yabrín. He left a Wálí in Yankal, the inhabitants of which submitted to him. He then marched towards Şohár, and sent forward Rabí'ah-bin Ahmed el-Wahashí to advise his cousins to descend from the Fort of Şohár. This person, however, instead of doing so, when he came to them, advised them to resist firmly. When Mohammed arrived at Şohár, he was encountered by the Benú-Hináh, and a battle was fought in which many of them were slain. Rabí'ah-bin Ahmed was wounded and made prisoner. The Benú-Hináh were defeated and retired into the Fort.

Mohammed's army occupied the principal mosque, and he himself took up his quarters in the house of Bin-Mahmúd. He then spoke to Rabí'ah-bin Ahmed and said to him, "If you wish to remain with us, you are secure, but if you wish to join your companions in the Fort, I will send you in safety." As he elected to be sent to the Fort, his wish was complied with.

Mohammed-bin Náşir had placed twelve men mounted on mares as videttes on the eastern side of Şohár, as he had heard that Khalf-bin Mubárik had collected the Benú-Hináh from el-Rosták and Maskat, and had arrived at the Fort of Şaham. Meanwhile Mohammed-bin Náşir had received the submission of all Şohár and its inhabitants, and the latter, to whatsoever tribe belonging, had received assurances of security and none were molested. With him were Bedouins of the Benú-Yás, and Benú-Na'im, and their sub-tribes, and also the "Hadr."



One night, a field of millet by the wells of the town was destroyed. The owner complained to Mohammed-bin Náşir, who inquired who had destroyed his field. He replied, "the Benú-Yás and the el-Na'im, and the Bedouins, and others with you." He said, "How much compensation do you require for your field? take two hundred Mohammadis."<sup>18</sup> On his refusal he said, "Take four hundred." He still refused, and Mohammed-bin Náşir offered five hundred. But the man said, "I will not be content unless you exact justice of them?" So he summoned the Sheykhs, and on their presenting themselves, ordered them to be bound to stakes. The man would only accept their being whipped as reparation, so he had them all scourged, and would not heed their appeals to him for mercy until justice had been exacted, when he released them from the cords.

Now this was a stratagem of the Benú-Hináh to estrange from him the Bedouins, who then left Mohammed-bin Náşir, and returned to their own lands. As soon as he heard of their departure, Khalf-bin Mubárik attacked Mohammed-bin Náşir with his adherents. The attack was made soon after sunrise, and Mohammed-bin Náşir's followers were taken by surprise. When the latter was informed of the arrival of Khalf-bin Mubárik, he is said to have remarked, "This hour is not to us, and not to them, but as God wills." Thereupon he mounted his mare, and his followers mounted with him, and they encountered Khalf at the gate of the Fort of Şohár. In the engagement Khalf-bin Mubárik was killed, and the Benú-Hináh were defeated and pursued by Mohammed-bin Náşir to the Fort wall. There a bullet fired from the Fort above struck him, and his followers carried him off and he died.<sup>19</sup> Fifteen of his followers also were killed whose names we do not mention. The people of Maskat and el-Rosták retired to the latter place.

For three days after the burial of Mohammed-bin-Náşir, none but the leaders knew of his death, and the garrison of the Fort of Şohár had well nigh surrendered it.

They then returned with the Seyyid Seyf-bin Sultán to Nezwá, and he was appointed Imám of the Musalmáns by the Kádhí, on Friday after sunset in the early part of Sha'bán, in the year 1140 of the Hijreh [A. D. 1728.].



## Notes to Book I.

<sup>1</sup> (p. 112.) The fourth Book of the 'Kesh-ul-Ghummeb.'

<sup>2</sup> (p. 112.) The el-Azd. The tribe el-Azd (the Āzdites) derives from Darra el-Azd, who according to the Arabian genealogers was in the tenth line of descent from Kaḥṭān. Kaḥṭān begat Ya'rūb, who begat Yashjob, who begat 'Abd-el-Shems, or Sabā, who begat Kaḥlān, who begat Zeid, who begat Mālik, who begat Nabī, who begat el-Ghauth, who begat Darra el-Azd.

<sup>3</sup> (p. 112.) Mālik-bin Fahm. The leadership of the Azdites into 'Omán is commonly, as here, ascribed to Mālik-bin Fahm, whose pedigree is correctly given to el-Azd. It will thus be seen that he was in the 23rd line of descent from Kaḥṭān. The mention of the younger Darius might lead one to suppose that the immigration of Yemenites to 'Omán under Mālik-bin Fahm occurred in the fourth century before Christ. The account also given by the writer of a paper on 'Omán, in the Bombay Government Selections, Vol. XXIV, gives the following account of this event :

"Mālik-bin Fahm of the province of Najd, the first native Arabian who entered 'Omán four centuries before the Christian era, came by the route of Yemen, &c."

Now it is generally allowed that the period of Kaḥṭān, the ancestor of Mālik, may be fixed somewhere about 700 B. C. Assuming this, it is impossible to believe that Mālik-bin Fahm lived at the early period mentioned above. Other and more authentic accounts of Mālik also prove that his period was much later. The following biographical notice of that leader is extracted from the Index to Dr. Wüstenfeld's Genealogical Tables.

"Mālik-bin Fahm was leader of the Azdites when they emigrated on account of the imminent breaking of the dyke of Máreb. He led them first to 'Omán, then to el-Bahrain, and finally established himself on the borders of Syria, where he founded the kingdom, the government of which through the marriage of his daughter Racash passed to the Lakhmidites." (Reiske, Hist. Arab., p. 8.)

The bursting of the dyke Máreb and consequent emigration of Yemen tribes are events which are supposed to have happened in the 1st century of our era or beginning of the 2nd. By some accounts 'Amr-Muzeilka, who was 17th in descent from Kaḥṭān and also an Azdite, was the original leader of the Yemen emigrants, and Mālik is said to have arrived in 'Omán later.

At all events the probability is that the entry of Mālik-bin Fahm to 'Omán occurred in the early part of the 2nd century after Christ. The part he played in the history of 'Omán is probably exaggerated in native popular traditions. 'Omán had in older times formed a province of the Yemenite kingdom under Ya'rūb-bin Kaḥṭān. The period of Persian conquest is, I imagine, unknown.

<sup>4</sup> (p. 112.) Ka'b was ancestor of a branch of the Azdites called el-Azd el-Shanúa, a term signifying the hatred they mutually bore one another.

<sup>5</sup> (p. 112.) Nasr-bin el-Azd. This personage has also been named as the leader of the Azdites from Yemen and founder of the el-Azd of 'Omán.

(Vide Rev. C. P. Badger's 'Imāms and Seyyids of 'Omán,' Intro., pp. VI, and VII.)

<sup>6</sup> (p. 112.) Mālik-bin Fahm appears to have had two brothers Soleym and 'Amr.

<sup>7</sup> (p. 113.) Kelbeh meaning 'bitch.'

<sup>8</sup> (p. 113.) Of Ma'add or 'Adnān.

All the preserved Arabian genealogies are traced back to one of two ancestors, either to Kaḥṭān or to 'Adnān. Ma'add was the son of 'Adnān, so that the term Ma'addite is



included in that of 'Adnánite. 'Adnán being accounted a descendant of Ishmael, this division of Arabian families is commonly called Ismā'īlīte. The prophet Muhammed belonged to this stock, and was of the 22nd generation from 'Adnán, whose period is placed at about 300 B. C.

The great rival division consists of the Arabs of Yemen descended from Kahtán, and these are designated Yemenite or Kahtánite Arabs. Kahtán is often supposed to be identical with Joktan of Genesis, but the period of the latter must have been fully 2000 years B. C., whilst the Arabs calculate this Kahtán to have lived 400 years before 'Adnán, or in B. C. 700, leaving a discrepancy of 1300 years. Kahtán is by some Arabic historians asserted to be descended from Ishmael. Arabian historians employ four terms in classifying the various Arab stocks, and are not in accord in the application of those terms. They are—

- el-'Arab el-Bádiyeh (البادية)
- „ „ el-'Aribeh (العارية)
- „ „ el-Mota'arribeh (المتعربة)
- „ „ el-Mosta'ribeh (المستعربة)

The terms 'Aribeh and Mosta'ribeh frequently are taken to indicate the Kahtánite stock; Mosta'ribeh being applied to the Ishmaelites. These divisions also are sometimes designated respectively "pure" or "genuine" and "naturalized" Arabs. Abul-Fedá says, historians divide the Arabs into three classes: (1) Bádiyeh, (2) 'Aribeh, and (3) Mosta'ribeh. The first were the lost tribes of Ad, Thamúd, and Jorham the elder, who were destroyed for impiety in the time of Ad. The second are the Arabs of Yemen descended from Kahtán. The third are descendants of Ishmael, son of Abraham.

Another account taken from Ibn-Dihhiyeh divides the surviving Arabs into: 1st, el-'Aribeh, Arabs "par excellence," claiming descent from Iram (Aram of Gen. x. 23), son of Shem. 2nd, el-Mota'arribeh, naturalized and not Arabs, descended from Kahtán. 3rd, el-Mosta'ribeh, still less pure Arabs, descendants of Ishmael. I extract yet another account from a note in Chenery's translation of Harírí. "Shem was the primate of the earth after his father, and according to his father's blessing became the ancestor of the prophets, all of whom, whether Arabs or foreigners, are of the posterity of Shem. He went as far as Yemen and founded San'á, and settled in the middle region of the earth from Yemen to esh-Shám, possessing the Holy Place. From him were descended Ad and Thamúd and Tasm and Jedís and el-'Amálik, and the subjects of Ya'rob and Jorhom the elder, who were called العرب العاربة el-'Arab el-'Aribeh, because they were created speaking Arabic; also the descendants of Ismá'íl, called العرب المتعربة, el-'Arab el-Mota'arribeh, because they acquired the Arabic tongue by settling among the former; also العرب المستعربة, el-'Arab el-Mosta'ribeh, who are defined as specially the "descendants of 'Adnán." [Assemblies of Harírí, Chenery, Vol. I, p. 466.]

<sup>9</sup> (p. 113.) Wádí Rekot?

<sup>10</sup> (p. 113.) Ten sons of Málík are mentioned, Honáa being youngest. He appears to have had a grandson named Ferhúd. The name Feráhúd does not appear in Wüstenfeld's collection of pedigrees.

<sup>11</sup> (p. 113.) El-Shihyr. The Esher of Marco Polo, who wrote "concerning the city of Esher, Esher is a great city \* \* \* 400 miles distant from the Port of Aden. It has a king, who is subject to the Soldan of Aden. He has a number of towns and villages under him and administers his territory well and justly. The people are Saracens. The place has a very good haven, wherefore many ships from India come thither with various cargoes; and they export many good chargers thence to India. A great deal of white



incense grows in this country and brings in a great revenue to the Prince, &c. &c." (Chap. XXXVII., Book III., Vol. 2, Colonel Yule's Edition of Marco Polo).

The following information is extracted from Colonel Yule's notes:

Shihr, or Shehr, with the article Es-Shehr, still exists on the Arabian Coast as a town and district about 330 miles east of Aden. \* \* The hills of the Sheor and Dhafār districts were the great source of produce of the Arabian frankincense. (*Vide* pp. 378, 379, Yule's Marco Polo.)

In modern times the port of Makalla appears to have superseded el-Shihr, and the sources of wealth of that port of Arabia have become exhausted.

<sup>12</sup> (p. 113.) Mahrah-bin Heidán, from whom the district Mahra was named. The full pedigree is not given, Mahrah being of the 15th generation from Kahtán. The following notices are translated from Dr. Wüstenfeld's Register. "Some say Mahra-bin Heidán "belongs to the branch Ma'add-bin 'Adnán, others to Codhá'a. The family, after "separation, settled in the coast line of el-Shihr between Yemen and 'Omán, and retained "the old Himyaric language. The celebrated Mahari camels derive their name from Mahra."

The district of Mahra was at one period in a measure under the power of the Imáms of 'Omán. The language is said to be still peculiar to its inhabitants. It is to be remarked that the settlement of Mahra-bin Heidán at el-Shihr was probably earlier than the period of Málik-bin Fahm.

<sup>13</sup> (p. 113.) The king Dárá, son of Dárá. An obvious anachronism. The period of younger Darius was about 337 B. C. As from about 300 B. C. to 220 A. D. Persia was under the kings of the Ashkánian dynasty, or the Arsacides, one of that line must have been in power at the time of Málik-bin Fahm.

<sup>14</sup> (p. 113.) Marzabán. A Persian word meaning a governor of an outlying province, or "Margrave."

<sup>15</sup> (p. 113.) Kálhát. This town was visited by Marco Polo towards the end of the 13th century, who wrote concerning it—"Calatu is a great city, within a gulf which bears "the name of the Gulf of Calatu. It is a noble city \* \* The people are Saracens, and "are subject to Hormos. And whenever the Melik of Hormos is at war with some prince "more potent than himself, he betakes himself to this city of Calatu, because it is very "strong, both from its position and its fortifications. \* \* They also export many "good Arab horses from this to India. For as I have told you before the number of "horses exported from this and the other cities to India is something astonishing." \* \* "The city of Kálhát, says Ibn Batútá, stands on the sea-shore. It has fine "bazaars and one of the most beautiful mosques that you could see any where, the walls of "which are covered with enamelled tiles of Káshán. \* \* Most of them (inhabi- "tants) are Schismatics, but they cannot openly practise their tenets, for they are under "the rule of Sultan Tehemten, Malik of Hormuz, who is orthodox. \* \* There was "still a horse trade at Kalhat in 1517." \* \* (*Travels of Marco Polo, Col. Yule's edition, pp. 381, 282, Vol. 2.*)

Ibn Batútá wrote in 1328. In modern times, Kálhát is an insignificant place, but extensive ruins are traced. The Schismatics alluded to by Ibn Batútá were doubtless Ibádhís, then the prevailing sect in 'Omán. The author of the "*Keshf ul-Ghummeh*" mentions the rule of Malik of Hormuz as will be seen. In modern times scarcely any horses are produced in 'Omán, except for the Sultán's private stable.

<sup>16</sup> (p. 113.) El-Jowf. A term which was applied to the central valley region from 'Omán proper to el-Dháhireh. Mr. Badger identifies el-Jow and el-Jowf, but this is erroneous.



<sup>17</sup> (p. 114.) The account of the battle has been abridged in translating.

<sup>18</sup> (p. 115.) Aqueducts. In the Arabic "folej." They are subterraneous artificial channels, similar in all respects to the "Kanáts" or "Kárízes" of Persia and neighbouring countries. Probably the system was introduced into 'Omán by Persians.

<sup>19</sup> (p. 116.) The families here enumerated are all Azdite, and the pedigrees are correctly given. The mention of 'Armán-bin 'Amr-bin el-Azd amongst the contemporaries of Málik-bin Fahm must be an anachronism, the former personage having been in the 10th line of descent only from Kahtán. The Yahmadi family of 'Omán derive, I take it, from el-Yahmad-bin Homná. It is more than doubtful whether so many famous Yemenite families settled in 'Omán, as stated by the author.

<sup>20</sup> (p. 116.) The el-Azd named it 'Omán, &c. The name is also by some asserted to be derived from a son of Kahtán, named 'Omán. According to this version, when Ya'rub-bin Kahtán established the Yemenite Empire, he conferred the government of two Provinces on his brothers 'Omán and Hadhramowt, and the Provinces were thereafter so named. These two personages are, however, usually thought mythical.

The country might have been named by Arabians from the root عَمَن 'Omán, which has a sense of tarrying or abiding.

<sup>21</sup> (p. 116.) The Persians called it 'Mazún.' This statement is borne out by other authorities.

<sup>22</sup> (p. 116.) Sámah-bin Loweij.

This name may be noted as the first mentioned of the Ishmailite branch. Sámah belonged to the famous Koreysh family and was of the 14th generation from 'Adnán. The following notice of him is translated from Dr. Wüstenfeld's Index. "Sáma-bin Loweij "on account of a quarrel with his brother 'Amir abandoned the 'Heimath' and journeyed "towards 'Omán. In Jowf el-Hamila his camel fell over an 'Arfaja tree (a thorny shrub), "in which a snake had concealed itself. The snake struck at his leg and bit him so that "he died. His descendants who were called after his mother "Beni-Nájiya," dwelt in "'Omán in the hamlet of el-Towám." A portion ultimately settled themselves in Basra, where the Quarter Sáma is named after him.

<sup>23</sup> (p. 116.) El-Jow is the name of the district immediately surrounding Bereymí.

<sup>24</sup> (p. 116.) As Asd-bin 'Imrán was Azdite, this was an intermarriage between the great rival stocks.

<sup>25</sup> (p. 116.) El-Sirr. This name has been variously applied. Sometimes it has designated the Western coastline of 'Omán. As here used, its site was apparently somewhere between Bereymí and the modern Abú-Dhebí.

<sup>26</sup> (p. 116.) Benú-Rúáheh. There is a strong clan so called now in 'Omán.

<sup>27</sup> (p. 116.) Nizár. From Nizár-bin Ma'add-bin 'Adnán.

<sup>28</sup> (p. 116.) Málik-bin Zoheir. This person was not of the Azdite stock, but was of the tribe el-Tanúkh whom he led from Nejd to el-Hirá in 'Irák.

<sup>29</sup> (p. 117.) "The historian Hamza relates that Málik-bin Fahm was accidentally slain "by his son Suleimah, who thereupon fled into 'Omán, where he left a large progeny, "which existed a long time after the rise of Islám." Imáms and Seyyids of 'Omán, Intro., p. VII.

Also "Šalímah-bin Málik shot his father by accident in the darkness, who had himself instructed him in the use of the bow." *Reiske, Hist. Arab.*, p. 12. [Register zu den genealogischen Tabellen, Dr. Wüstenfeld, p. 408].

The Arabic couplet is a favorite quotation in allusion to ingratitude—

"I taught him archery day by day: when his arm grew strong, he shot me."

<sup>30</sup> (p. 117.) His adventures are omitted in translation.



<sup>31</sup> (p. 118.) El-Mustatir meaning "the wary." The descendants of this el-Julandá, who was an Azdite, appear to have assumed the name Benú-Julandá. It is said that each one who became king in 'Omán, took the name of Julandá.

[*Vide* Imáms and Seyyids of 'Omán, p. 7].

<sup>32</sup> (p. 118.) The commencement of the Sassanian dynasty was A. D. 220; it terminated with the Mohammedan conquest.

<sup>33</sup> (p. 118.) This Book serves as an introduction to the subsequent narrative. The author must have been at considerable pains to collect his materials judging from the paucity of books now in 'Omán. The more ancient Arab historical works are chiefly accounts of famous tribes or families, and the genealogies of important personages are very minutely traced. The science of genealogy was highly elaborate. There were ten recognized gradations of communities, from the "people" as a whole down to the "family" of less than ten persons. The terms used to describe those various classes are analogous to our words, "race," "nation," "tribe," "clan," "kin," "family." But the shades of gradation are more minutely given in Arabic than English can describe. The term "Ḳabīleh," answering to our "tribe" or "clan" was fourth in the Arab classification. In modern times Arabs have ceased to preserve their pedigrees, and in 'Omán the people know little of their origin.

Summarized, the events related in this book are as follows. Yemenite Arabs chiefly Azdite arrive in 'Omán and drive out the Persians, who were previously in possession of the whole province. Thenceforward, for a considerable time, the Azdites were sole masters and their chiefs ruled supreme. Later, however, the Persians regained a footing, and at the time of the introduction of Mohammedanism, a Persian deputy was residing in 'Omán, and was subsequently expelled by the Azdite tribes under the descendants of el-Julandá.

'Omán and Bahrain were included in the conquests of the Persian Monarch Khosrú Parwíz at the end of the 6th century.

### Notes to Book II.

<sup>1</sup> (p. 118.) Book or Chapter 33 of the "Keshf ul-Ghummeh."

<sup>2</sup> (p. 118.) The subjugation of 'Omán by the Persians in the time of the Julandáites appears to have been only temporary or partial, as at the commencement of the Mohammedan Era the Julandáites 'Abd and Jeifar were undoubtedly in power. When the remnant of the Persians were expelled, 'Omán did not, however, become an independent kingdom. Its princes embraced the religion of Islám in the time of Mohammed, whose paramount authority they acknowledged. Thenceforward until about 751 A. D., 'Omán was nominally under the Khalifehs and immediately controlled by the governors of 'Irák.

Before the success of Mohammed in 'Omán it is mentioned that one Abú-Basír-bin Asíd or 'Othá had retired to the coast of 'Omán [*síf el-bahr*], and collected round him there those who in Mekka had embraced the new Faith, but they were unable to maintain themselves, and their numbers gradually decreased to 62 or 70. [Nawáwí.]

<sup>3</sup> (p. 118.) Dabá. There is a small town now named Dibbá, north of Sohár. There appears to have been also a place named Dabá between Bahrain and 'Omán, where el-Atík-bin el-Asd settled after the emigration from Máreb. Hence the family called Azd-Dabá. [Wüstenfeld, Index.]

<sup>4</sup> (p. 119.) Abú-Bekr succeeded Mohammed, and was Khalifeh from A. D. 632 to 634. On his accession rebellions occurred in several provinces, 'Omán amongst the number. An expedition was despatched to 'Omán and Yemen under 'Ikrimah-bin Abú-Jahl, who



assisted by the Julandáites 'Abd and Jeifar and other Azdites, succeeded in quelling the rebellion. In a great battle fought at Dabá (*vide* note 3), ten thousand rebels fell, and many were carried into captivity. It is stated that 'Othmán-bin Abul-Así was appointed governor of 'Omán and el-Bahrain by Abú-Bekr, and that he defeated and slew a Persian commander named Zohrák at Towwaj. In Mr. Badger's Introduction to the 'Imáms and Sayyids of 'Omán, when these events are summarized, it is stated that 'Othmán was appointed by 'Omar (the successor of Abú-Bekr). For incidental notices of the history of 'Omán at this period many Arabian authors may be consulted, amongst them Nawáwí, Ibn-Sa'd, Ibn-Koteiba, Beládzorí, Abú-Ja'far's *Tárikh-el Mulúk*.

<sup>5</sup> (p. 119.) The Nizáriyeh as opposed to the Yemenites. For explanation of the term *vide* Note<sup>57</sup> to Book I.

<sup>6</sup> (p. 120.) *The Desert Country*. It may also be read "within three days' march" of "el-Balka'ah." The latter word, however, means waste, uninhabited land. Probably the country west of Bereymí is meant.

<sup>7</sup> (p. 120.) Maskat. In this part of the "*Keshf ul-Ghumme*" the name is spelt *مَكَّة*, whilst in later books it is spelt *مَسَكَة* (maskad).

<sup>8</sup> (p. 120.) Julfár. The Persian name for the town on the site of the modern Rás-el-Kheimah.

<sup>9</sup> (p. 120.) Zenj. The inhabitants of the East African Coast. Mr. Badger thinks this the most reliable record we possess of the first emigration of Arabs of 'Omán to the east coast of Africa.

<sup>10</sup> (p. 121.) This appointment of a native of 'Omán to the governorship appears to have led to the assertion of independence soon after.

<sup>11</sup> (p. 121.) The Ibádhiyeh. This is the first mention of the remarkable Ibádhi sect, which has from this time forward exercised so powerful an influence in 'Omán, and which appears already at this early period to have become predominant there. The sect takes its name from 'Abdullah-bin Ibádh, who flourished according to the author of the "*Keshf-ul-Ghumme*" about A. D. 685-705, but, according to the other works quoted by Badger, A. D. 744-749. The sect is undoubtedly an off-shoot of the Khárijite schism. In the year 657 A. D., a large number of the Caliph 'Alí's followers revolted from him, and these received the appellation of "Khawárij," *i. e.* schismatics, or heretics, who went forth from the true faith. In the following year, the Khárijites to the number of 4000 were attacked and cut to pieces by 'Alí. Nine only escaped, of whom two reached 'Omán, where they became apparently successful propagandists of the Khárijite doctrines, the most important perhaps of which consisted in the positive rejection of the Caliphs or Imáms 'Othmán and 'Alí, and the assertion of the right to elect and depose their Imáms. In this and other fundamental points 'Abdullah-bin Ibádh simply followed the Khárijites. It seems probable that the people of 'Omán were imbued with these views before the time of 'Abdullah-bin Ibádh, and were thus prepared beforehand to accept his teaching. In what manner the latter was propagated does not appear. The Ibádhi doctrine as to the Imáms may be roughly contrasted with that of the Sunnites and Shí'ahs as follows:

1. *Sunnites* accept the four successors of the prophet as true Khakífahs, or Imáms, and the generally acknowledged representatives known to the present day, when they recognize the Sultán of Turkey as head of the orthodox.

2. *Shí'ahs* absolutely reject all claims to the Imámate other than those of 'Alí and his descendants. At the present time they acknowledge no visible Imám.

3. *Ibádhis* reject 'Othmán and 'Alí and curse them as infidels. They assert the right of true believing Muslims (themselves that is) to elect their Imáms, and to depose them for transgressions. The persons successively elected to their Imáms by the Ibádhis



have also usually been temporal rulers in 'Omán. They were styled "Imám of the Musalmáns," not "Imám of 'Omán." It is to be noted that it is not considered indispensable by the Ibádhís to have an Imám at all. An account of the sect is given by Mr. Badger in his work "Imáms and Seyyids of 'Omán." The "Keshf ul-Ghummeḥ" also supplies some information about it, which has been submitted to Government in a previous paper, regarding which *vide* Proceedings, Asiatic Society of Bengal, for January, 1873, pp. 2 to 10. In the same work may be found some of the correspondence of 'Abdullah-bin Ibádh.

<sup>12</sup> (p. 121.) The first of the Imáms probably.

<sup>13</sup> (p. 121.) Musalmáns, *i. e.* Ibádhís.

<sup>14</sup> (p. 122.) You are my Imám, go before (amám) me.

<sup>15</sup> (p. 123.) For meaning of el-Shárí, *see* Note 13 to Book III.

<sup>16</sup> (p. 123.) Wádí Hattá is a valley north-west of Sohár.

<sup>17</sup> (p. 124.) Bowáriḥ. According to Mr. Badger, "Bowárij," or war-vessels.

<sup>18</sup> (p. 124.) Eastern districts, or el-Sharkíyeh. Similarly, the western part of 'Omán is occasionally distinguished as el-Gharbiyeh," or el-Gharb." The divisions of the whole Province commonly used by the people of 'Omán are, 1, "'Omán proper," limited to the central region. 2, "el-Sharkíyeh," eastern districts, including *Ja'lán*. 3, *el-Báṭineḥ*, the plain situated between the mountains and the sea north of Maskat. 4, *El-Dháhireḥ* including el-Jow, the tract beyond the hills extending from 'Omán to el-Bereymí. 5, *el-Shemál*, the north and west. 6, lastly there are the hill tracts and Wádís not comprised in any of the preceding divisions. The former between el-Báṭineḥ and el-Dháhireḥ are called in plural el-hujúr, sing. hejer-el-Báṭineḥ, hejer-el-Dháhireḥ. Each Wádí has its distinctive name, sometimes taken from the tribe inhabiting it.

<sup>19</sup> (p. 125.) Accordingly his reign commenced A. D. 808.

<sup>20</sup> (p. 126.) He retained the spiritual office whilst deprived of the temporal power.

<sup>21</sup> (p. 126.) Mahrah appears from this to have acknowledged the Imám Muhenná, but the authority of the 'Omán rulers over that district must have been very precarious.

<sup>22</sup> (p. 128.) Farḳ is a village a few miles south of Nezwá.

### Notes to Book III.

<sup>1</sup> (p. 129.) Izkí, or Azká, now vulgarly named Zikkí.

<sup>2</sup> (p. 129.) El-Nizár. At Zikkí there are two resident families or tribes representing the great rival branches. These families are still called Yemen and Nizár. The attack here described would at the present day be called an attack by the Gháfiris upon the Hináwís.

<sup>3</sup> (p. 129.) El-Madhariyeh, a term synonymous with Nizáryeh, being derived from Madhar-bin Nizár-bin Ma'ád-bin 'Adnán.

<sup>4</sup> (p. 129.) El-Haddán. That is in the mountains between el-Báṭineḥ and el-Dháhireḥ.

<sup>5</sup> (p. 129.) El-Jow. The district about the modern el-Bereymí.

<sup>6</sup> (p. 129.) Sohár was and still is one of the towns where the Imám could perform Friday's divine service.

<sup>7</sup> (p. 130.) Benú-Hináḥ. The name of this clan became celebrated in 'Omán, and gave its name to the whole Yemenite party in later times. Badger refers the origin of this tribe to Hana or Hina-bin 'Amr-bin el-Ghauth-bin Ṭai-bin 'Odád, a descendant of Kahlán. According to this genealogy, the Benú Hináḥ, though Ḳaḥṭánite and Yemenite, were not of the Azdite stock. I am inclined to think the forefather of the Hinái tribe of





'Omán is to be sought amongst the descendants of el-Azd. Amongst the immediate progeny of el-Azd, we find the name el-Hinw, and in the next generation el-Hann. Again, one of the sons of Málik-bin Fahm was named Honá, or Honát, or perhaps Hináh. There is on other grounds much reason to believe that the Benú-Hináh are an Azdite clan.

<sup>8</sup> (p. 130.) Mohammed-bin Núr. This name is still a by-word in 'Omán. From the detestation in which this person was held, he was dubbed Mohammed-bin "Búr," instead of "Núr," the former word bearing an evil signification.

<sup>9</sup> (p. 130.) The Caliph el-Mo'tadhid-billah reigned from A. D. 892 to 902.

<sup>10</sup> (p. 130.) Himyarite, another term for the Yemenites, &c.

<sup>11</sup> (p. 131.) Korán, Chap. XIII.

<sup>12</sup> (p. 132.) The Míhráb is the place in a mosque where the priest prays with his face towards Mecca.

<sup>13</sup> (p. 132.) As a "Sháfi" Imám. This means that the Imám had vowed on assuming office to sacrifice life rather than yield or fly in battle with the enemies of the Faith. Those not so bound were termed Dáfi'í Imáms. *Vide* note 28 to Book IV.

<sup>14</sup> (p. 133.) As a Dáfi'í. See preceding note.

<sup>15</sup> (p. 133.) Sultán of Baghdád, i. e. the Caliph. The Ibádhis would grudge him the title of Caliph.

<sup>16</sup> (p. 133.) The Karámitah, or Karmatians, a sect very inimical to the Mohammedans. They turned the precepts of the Korán into allegory. They caused great disturbance, and under Abú-Dháhír took Mecca (*vide* Sale's Koran, p. 130).

<sup>17</sup> (p. 133.) Abú Sa'id. De Sacy styles him "Abou-Saïd Hasan, fils de Behram, surnommé Djénabi, parce qu'il était de Djenaba." Abulfeda says, Junnábah (or, as Ibn Khallikán writes it, Jannábah), is a small town of el-Bahreïn, from whence sprang Abú-Sa'id el-Junnáby, the libertine, the Kármuty, who attacked the Híjj and killed many of them. Imáms and Seyyids of 'Omán, p. 28, note 1.

<sup>18</sup> (p. 133.) Probably the creditors would object to his devoting himself to death until their claims were satisfied.

### Notes to Book IV.

<sup>1</sup> (p. 134.) Mr. Badger's author, Salil-bin Razík, has the following statement here—"*Ibn Kaisar says*: I have not been able to find the date when allegiance was given to him [Sa'id-bin 'Abdullah], nor how long he retained the Imámate." I have not been able to discover who Ibn Kaisar is, but Salil-bin Razík's quotations appear to be from the "*Keshf ul-Ghumme*h." I once questioned Salil-bin Razík concerning the authorship of the "*Keshful-Ghumme*h," but he was then very feeble from age, and could not inform me.

<sup>2</sup> (p. 134.) *Vide* note 13, Book III. Mr. Badger has in his work—"This appointment also was made in spite of much opposition."

<sup>3</sup> (p. 134.) That is, the Ibadhi faith.

<sup>4</sup> (p. 136.) I am sorry I cannot make the preceding account more clear, the original is very obscure.

<sup>5</sup> (p. 136.) Saluted him as Imám. That is, recognized the fact of his election without positively swearing fealty.

<sup>6</sup> (p. 136.) Sadakat, *voluntary* poor-rate.

<sup>7</sup> (p. 137.) As Sultán. The term means probably as temporal ruler, and was not used as a title. That of Imám would include the other.

<sup>8</sup> (p. 137.) What follows is inconsistent with the previous statements, but such inconsistencies abound in most Arabic writings.



<sup>9</sup> (p. 137.) The quotation is from a religious work. It is one of the verses alleged by the Shí'ahs to have been abstracted from the original *Ḳorán* and suppressed. They take it to point to the oppressors of 'Alí and his descendants.

<sup>10</sup> (p. 138.) Kadam. Between Bahlá and el-Homrá.

<sup>11</sup> (p. 138.) Wádi el-Nakhr. About 2 hours west of el-Homrá.

<sup>12</sup> (p. 138.) Takých.

<sup>13</sup> (p. 139.) The history of this period is confused and defective, probably because the standard Arabian works contain no accounts of this portion of 'Omán history. Henceforward the Caliphs seem to have lost their hold on 'Omán.

<sup>14</sup> (p. 140.) The dates are confused and unreliable, and several of the Imáms are, as will be observed, introduced out of their chronological order.

<sup>15</sup> (p. 140.) The year is not stated.

<sup>16</sup> (p. 140.) That is, from Mohammed-bin Khanbash to Málík-bin el-Hawárí, from A. D. 1162 to A. D. 1406.

<sup>17</sup> (p. 140.) The government of at least a portion of 'Omán had fallen after the time of Mohammed-bin Khanbash into the hands of the Benú-Nebhán, who were descended from another stock than the Azdites, though also *Ḳahtanite*. Their progenitor appears to have been Nebhán-bin 'Amr-bin el-Ghauth-bin Ṭaī. The Princes of this family were never elected to the religious office of Imám, but were called "Málíks," or Lords. They were strongest in el-Dháhireh, and probably none of them reigned supreme over entire 'Omán. Their power lasted more or less to A. D. 1617, or for nearly 500 years. At the present day, no clan of 'Omán is poorer or more despised than the Nebáhench.

<sup>18</sup> (p. 140.) At that period Abáká Khán, son of Hulágú Khán, was monarch of Persia.

<sup>19</sup> (p. 140.) *Ḳalhát*, *vide* note 5, Book I.

<sup>20</sup> (p. 141.) Dhafár. Marco Polo says of Dhafár—"Dufar is a great and noble and fine city. \* \* \* The people are Saracens and have a Count for their chief who is subject to the Soldan of Aden \* \* \* Much white incense is produced here, and I will tell you how it grows. The trees are like small fir trees; these are notched with a knife in several places, and from these notches the incense is exuded. Sometimes also it flows from the tree without any notch; this is by reason of the great heat of the sun there. \* \* \* This Dhafár is supposed to be the Sephar of Genesis, x. 30." [Colonel Yule's Marco Polo, pp. 379-80, Vol. II.]

<sup>21</sup> (p. 141.) Dínár. A gold coin weighing  $71\frac{1}{2}$  barley-corns [Lane].

<sup>22</sup> (p. 141.) Owlád el-Reís, or the Ríayeseh, a tribe inhabiting a district west of Sohár.

<sup>23</sup> (p. 141.) The Málík or Lord.

<sup>24</sup> (p. 141.) Seyyid. This term, here occurring for the first time, means Prince or Lord or Master or Noble. In 'Omán it is prefixed to noble names as a "handle." At the present time, the Ruler of 'Omán is styled the Seyyid "par excellence."

<sup>25</sup> (p. 141.) See note 17.

<sup>26</sup> (p. 141.) According to Badger, an Azdite.

<sup>27</sup> (p. 141.) According to Badger, also an Azdite of the el-Yahmad.

<sup>28</sup> (p. 141.) The term employed is el-Shurát, which was applied to the *Khárijite* schismatics, because they said, "We have sold ourselves in obedience to God for Paradise when we separated ourselves from the erring Imáms." [Lane's Lex., Art. شري]. The singular "Shárí," we have seen applied in a peculiar sense to the Imáms, *vide* note 13 to Book III.

<sup>29</sup> (p. 142.) The priest el-Khaleylí, the Imám 'Azzán's Samuel in later days, when wishing to perpetrate a similar spoliation, appealed to this period of 'Omán history as precedent and justification.



<sup>20</sup> (p. 142.) *Korán*, Chap. II.

<sup>21</sup> (p. 143.) *At Nezvá*.

<sup>22</sup> (p. 143.) It must have been during the reign of Mohammed-bin Ismá'íl that the Portuguese under Alfonso di Albuquerque captured the sea-port towns of 'Omán. Maskat was taken in A.D. 1508. There is no mention of the advent of the Portuguese in "*Keshf ul-Ghumme*h "

<sup>23</sup> (p. 143.) "*Zekát*" and "*Sadaqat*" are both terms denoting religious alms. The former however is obligatory.

<sup>24</sup> (p. 144.) *Jeziyah*, or capitation tax.

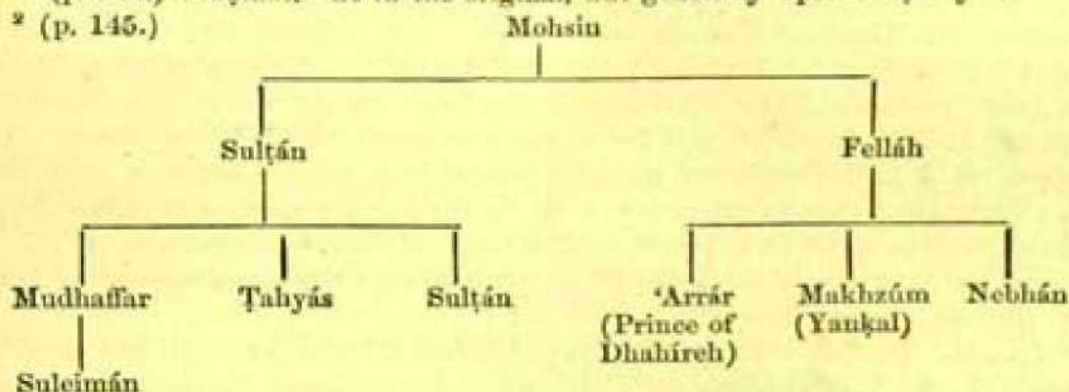
<sup>25</sup> (p. 144.) The sentiments are in accordance with modern enlightenment. In the East, under native rulers, such principles are seldom acted on.

<sup>26</sup> (p. 144.) *Kharáj*, or land tax.

### Notes to Book V.

<sup>1</sup> (p. 144.) *Maqínát*. So in the original, but generally spelt *Maqaniyát*.

<sup>2</sup> (p. 145.)



<sup>3</sup> (p. 146 ) Or *Bilád-Seyt*.

<sup>4</sup> (p. 146.) The narrative is very involved.

<sup>5</sup> (p. 146.) *Amír*. The term was employed in 'Omán in some cases to denote the chief of a powerful clan.

<sup>6</sup> (p. 148.) The clans of 'Omán, when "on the war path," march with drums beating and banners flying.

<sup>7</sup> (p. 149.) The original is very obscure.

<sup>8</sup> (p. 151.) Doubtless a Portuguese vessel. The author seems to avoid mention of the conquests of the Portuguese in 'Omán as much as possible. It would appear, however, that at this period the Portuguese had not possession of *Sohár*.

### Notes to Book VI.

<sup>1</sup> (p. 154.) "The true sect," *i. e.* *Ibádhí*.

<sup>2</sup> (p. 154.) Any one who has had much to do with 'Omán politics must allow that there are several true points in this description of the native character.

<sup>3</sup> (p. 155.) "*Bedú*" and "*Hadhr*." The *Bedú*, or *Bedouins*, are the pastoral Arabs inhabiting the great plains, and partly nomadic. The *Hadhr* are the dwellers in towns and villages and cultivated lands, the fixed, working, or agricultural population. The *Bedú* exercise much influence in 'Omán.

<sup>4</sup> (p. 155.) *Násir-bin Murshid* appears to have been the first *Imám* of the *Ya'rabí* family.



<sup>5</sup> (p. 155.) Now called Al-bú-Sa'íd. The family of the present Seyyids.

<sup>6</sup> (p. 156.) The Benú-Riyám inhabit the Green Mountains, "Jebel el-Akhdhar." Mr. Badger considers them of Mahrah origin. At present they belong to the Gháfirí division.

<sup>7</sup> (p. 157.) Mr. Badger says—"The Benú Hilál I take to be descendants of Hilál, one of the four sons of Amír-bin Sa'asa'ah (born about A. D. 381), a descendant of Ma'add and Adnán, &c." (Imáms and Seyyids of 'Omán.)

<sup>8</sup> (p. 157.) 'Ibrí or 'Obri. A town in el-Dháhireh, which was visited by Wellsted, and where he had a bad reception. There is also a tribe or clan, named el-'Ibriín. Whether the clan takes its name from the place or *vice versa*, I cannot say. The root of the name is the same as that of Heber, from which "Hebrew." The signification is "on the other side." The Latin form of the same word is Iber (Iberes, Iberian), equivalent to trans-ultra, &c. (Types of Mankind.)

<sup>9</sup> (p. 159.) The Portuguese.

<sup>10</sup> (p. 160.) El-Rúleh. The banyan tree, *Ficus Indica*.

<sup>11</sup> (p. 160.) Shí'ahs. Probably Persians.

<sup>12</sup> (p. 160.) El-Sír to be distinguished from el-Sirr, was another name for Julfár, now Rás el-Kheimah.

<sup>13</sup> (p. 161.) El-Efrenj, or Franks, meaning Portuguese, no doubt.

<sup>14</sup> (p. 161.) The narrative here suddenly terminates, but we may assume the attack on Sohár failed.

<sup>15</sup> (p. 161.) About 20 miles from Maskat, noted for its hot mineral springs.

<sup>16</sup> (p. 162.) El-Ahsá. A district of Nejd, called vulgarly Lahsá.

<sup>17</sup> (p. 162.) Benú-Lám. The "Benú-Lám" are a branch of the great Tai tribe, and therefore of Kahtánic origin through Kahlán; for Lám, born about A. D. 470, was the descendant of Tai, the descendant of 'Odád, the descendant of Kahlán (Badger's Seyyids of 'Omán, p. 67 note). Until subjugated by the Wahhábís, the Benú-Khálid were the most prominent tribe on the Arabian shore of the Persian Gulf. (Ibid.)

<sup>18</sup> (p. 163.) The term used is el-Shurat, *vide* note 28, Book IV.

<sup>19</sup> (p. 164.) In Badger's work, the date is A. H. 1059, or A. D. 1649.

<sup>20</sup> (p. 164.) No details of the capture of Maskat are given, but Mr. Badger's author has a long and detailed account of the matter, derived apparently from the popular legends. One story current is that the Arabs entered Maskat in the guise of peaceful peasants, hiding their arms in bundles of fire wood, and that they took the opportunity of the Portuguese garrison being assembled without arms at chapel to attack and massacre them. The Portuguese residence, or Factory home, is called by the Arabs el-Jereza (جرزة, for Igreja, or church). Mr. Badger has mistaken the word for Jezírah or "Island," which it closely resembles in the Arabic.

Sultán-bin Seyf commenced to reign A. D. 1640, and died on 4th October, 1680.

The date of the Portuguese expulsion is stated by European authorities 1650 or 1658. The present work does not enable us to fix it more accurately.

"In anno 1715, the Arabian fleet [meaning the Imam's] consisted of one ship of 74 guns, two of 60, one of 50, and 18 small ships from 32 to 12 guns each, and some "Trankies, or rowing vessels, from 4 to 8 guns each, with which sea-forces they keep all "the sea coasts from Cape Comorin to the Red Sea. They have often made "descents on the Portuguese Colonies on the coast of India, destroying their villages and "farms, but spare the churches for better reasons than we can give for plundering them.



"They kill none in cold blood, but use their captives courteously. In anno 1695, they quarrelled with the Carnatick Rajah, a potent Princely lord. Yet they came with their fleet and plundered and burned the towns of Barsalore and Mangalore, two of the best and richest towns on that Coast."

[The above is from Captain Alexander Hamilton's 'New Account of the East Indies.' He travelled from 1688 to 1723, and is therefore a valuable authority for this period.].

<sup>21</sup> (p. 165.) Jezfret el-Khadhrá, or Pemba.

### Notes to Book VII.

<sup>1</sup> (p. 168.) Body of horsemen. The term used is 'sariyeh,' which means a party of from five to three hundred or four hundred.

<sup>2</sup> (p. 168.) Sáhib el-'Anbúr. A title or a nick-name. 'Anbúr in 'Omán sometimes means a purse.

<sup>3</sup> (p. 169.) *Korán* XXIX, 1, Sale's translation,

<sup>4</sup> (p. 169.) Benú-Gháfír. The origin of the appellation of this tribe seems unknown, but they are undoubtedly Ishmaelite or 'Adnánite, and were therefore naturally opposed to the Yemenites or Kahtánites. As will be seen further on, under their able and brave chief, Mohammed-bin Násir, this clan became renowned and powerful in 'Omán. This chief headed the faction against their rivals the Yemenites, who also found a skilful and courageous leader in Khalf-bin Mubárik, the Dwarf, chief of the Benú-Hináh. This civil war was one of the fiercest recorded in the annals of 'Omán, a great number of the clans ranging themselves under their respective leaders, declaring either for the "Hináf" or "Gháfírí." Those faction terms have survived to the present day, and almost entirely supersede the older classifications, the rival factions being now termed el-Hináwíyeh and el-Gháfíríyeh. This is the explanation of the undue pre-eminence assigned by European writers on 'Omán to these two tribes, whose importance was accidental and temporary. For a time the Gháfírís gained the day, and their chief became Imám, but the Hináwís soon regained the ascendancy. At present, the power of the two sections is tolerably evenly balanced, the Gháfírís preponderating in the West and their rivals in the East. It is to be noticed that at the present day the fact of a clan styling itself of the Hináwí or the Gháfírí faction does not necessarily prove its origin to be Kahtánite, or Ishmaelite; for several Yemen tribes have ranged themselves with the Nejdites and *vice versa*. This fact occasions additional difficulty in tracing tribal genealogies.

<sup>5</sup> (p. 169.) See Note 1.

<sup>6</sup> (p. 170.) The names Yemen and Nizár here apply to rival families so called, not to factions.

<sup>7</sup> (p. 172.) *Korán*, XIII, 12.

<sup>8</sup> (p. 172.) Birkeh. This name is sometimes written so and sometimes Barká. In the *Kámús* it appears as "Birket el-Rameys."

<sup>9</sup> (p. 172.) "*Did not understand Arabic.*" Probably these were some of the people inhabiting the Ruús el-Jebel from Cape Mussendom. Southward the inhabitants of that locality differ in appearance from the other Arabs and speak a different dialect. Some, from their reddish skins and light eyes, have conceived them to have an admixture of European blood. On examination their language will probably be found to be a Himyarite dialect. They may be descendants of a Himyarite people who inhabited 'Omán before the inflow of Yemenites and others. They are named el-Shebúh or el-Shibiyín.

Cape Mussendom has been identified with "the promontory of the Asabí" of Ptolemy (by Forster), and the Asabí or Sabí with the Seba or Sebaim of Scripture. In accordance with this theory, this part of 'Omán was originally the seat of Cushite colonies,



in witness of which are adduced the names "Cúscan" (Cushan of Hebrew writers), [probably meaning Khasam] and a littoral termed by Pliny "the shore of Ham," "Litus Hammeum," now Maham, (?), adjacent to which is a "Wádí Ham," "Valley of Ham" (Types of Mankind). Again: "Ramss, an Arab port, just inside the Persian Gulf, perfectly answers to the sites of Raamah, catalogued among Kushite personifications in xth Genesis (*ibid.*)."

<sup>10</sup> (p. 173.) About six miles from Barká.

<sup>11</sup> (p. 174.) The prisoners were sometimes placed in exposed situations during a siege or battle to slacken the enemies' fire.

<sup>12</sup> (p. 176.) Al-Wahíbeh. A numerous, powerful, and warlike Bedouin clan of Sharkíyeh.

<sup>13</sup> (p. 176.) "*The Benú-Menáh and their allies*" would be more accurate, but at this period the term Hinái began to be used in its modern extended sense.

<sup>14</sup> (p. 177.) The el-Harth is the richest of the Hináwí tribes of the eastern districts. Many of this family inhabit Zanzibar.

<sup>15</sup> (p. 177.) El-Na'ím. The dominant tribe of el-Jow and Bereymí.

<sup>16</sup> (p. 179.) Maghribí meaning Nejdian.

<sup>17</sup> (p. 179.) Tenúf. A town of the Green Mountain.

<sup>18</sup> (p. 183.) A Mohammedí is about three pence.

<sup>19</sup> (p. 183.) The election of Mohammed-bin Násir to be Imám was evidently a forced measure and adopted only because of the great power he wielded as a warrior and ruler. His military genius seems to have surpassed that of any previous Imám or governor of 'Omán, and he had well nigh become by sheer talent and energy supreme over all 'Omán.

The restless energy of this Prince was imitated, for a time with much success, by the late 'Azzán bin-Ḳais.



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# JOURNAL

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Part I.—HISTORY, LITERATURE, &c.

No. IV.—1874.

*The Temple of Jayságar, Upper Ásám.—By J. M. FOSTER, F. S. A.,  
Názirah, Ásám.*

(With four plates.)

This temple, situated on the north bank of an immense tank, two and a half miles south of Síbságar (the ancient Rangpúr) in Upper Ásám, Lat.  $26^{\circ} 54' N.$ , Lon.  $94^{\circ} 40' E.$ , is not remarkable, when compared with many similar edifices in Central India, for its antiquity, ornamentation, or historical associations, but is of considerable interest from its being probably the most perfect specimen of stone architecture existing in Upper Ásám, and its having been erected at the time when the Hindú religion was first firmly established in the country, which was for once in its history in a state of peace under an energetic and competent ruler.

The occasional earthquakes, the destructive influences of the weather and the pipal tree, combined with the fact that no proper plans or drawings of most of the ancient edifices in Ásám have been made, rendered it desirable that some memorial of this temple should be preserved, as its destruction at a not very remote period may be anticipated. The cold weather of 1873-4 having set in, a small camp was formed, the jungle was removed from the edifice as far as practicable, and careful measurements were made of the most interesting parts of it. The photograph by Mr. H. A. Coombes, Superintendent of Police for this district, gives a very fair idea of the edifice and its decorations (*vide* plates).

The tank upon the bank of which this building is situated is very large, even for Ásám, its dimensions according to the Revenue Survey map being 900 by 650 yards, the 'bund' being about 120 feet wide on the top, and its



depth is stated to be thirty-six feet in the centre; the water level is about two feet above that of the surrounding country, and was formerly much more until the bund was cut through for some now unknown purpose. The earth removed during the excavation was used to form the banks. In its immediate neighbourhood are two other immense tanks, the Othae and Rudra Ságar, which are now dry and were probably never completed.

A slight historical sketch of the causes that led to the formation of this temple and tank will probably be found interesting. During the reign of Gadhádhhar Singh, *alias* Chupatpha, (died A. D. 1625) the Moamariahs or Muttacks (a people living in the north and north-east of Asám, who were divided into two clans, the Moamariahs so called from their being a distinct sect from the generality of Asamese, and the Morans, signifying 'inhabitants of the jungle') gave great trouble by incessantly making war upon and plundering their more peaceable southern neighbours. At last they became so powerful, that they elected a chief ruler of their own under the title of the Lorá Rájá, who completely defeated Gadhádhhar Singh, and took possession of the country as far south as Jorhát.\*

According to the native MS. Chronicles, Gadhádhhar Singh escaped to the jungles after his defeat, whilst his wife Jaymatí Koorie was captured by the Lorá Rájá and tortured by him to give information as to her husband's place of refuge. In the centre of the Jayságar Tank a post now stands: at this spot she is said to have been daily flogged, but without its producing the desired effect. On being questioned as to his whereabouts, and a promise being made that she should be liberated if she would give the necessary information, she replied that she had not seen him for a long time. Gadhádhhar Singh hearing of this presented himself one day in disguise before her, and asked her why she did not point him out to his enemies. She at once recognized him, but refused to betray him. Addressing him as a friend of her brother, she told him to leave her to her fate, as his submission to the Lorá Rájá could be of no advantage to either. Three times this scene was repeated, and finally Jaymatí Koorie told him she would insult him if he troubled her any more. He at length left for the jungle, and she, faithful to the last, died under her tormentor's hands.

Now Gadhádhhar Singh's sister was married to the Bor Phúkan, who lived at Gauhattí and was an ally of the Lorá Rájá; Gadhádhhar Singh took refuge in his house, and was so well disguised, that he remained there in safety, being known to his sister only, for two years or more. Ultimately,

\* It may here be noted that the Momariahs kept rising in rebellion with varying success until the Government was assisted by a British force in 1793. Ghargáon, the old capital, Rangpúr, the new one, Jayságar tank, Gauríságar tank, and other places, were frequently scenes of most sanguinary battles, the fights on several occasions lasting three days.



a misunderstanding between the Bor Phúkan and the Lorá Rájá occurred. The wife then revealed all to her husband; he and Gadhádhhar Singh raised strong forces, marched to Ghargáon, captured it, killed the Lorá Rájá, and reinstated Gadhádhhar Singh on the throne of his ancestors. With true oriental gratitude, he was no sooner firmly seated than he put to death his brother-in-law, the Bor Phúkan, and two other of the highest officers of State who had also assisted him, alleging as his reason that as they were powerful enough to depose and kill the Lorá Rájá, they might possibly serve him in a similar manner, should any quarrels arise between them. He did not live long after his restoration, and was chiefly occupied in restoring order throughout the country; and he strictly enjoined his son Rudra Singh to build a temple on the spot where his mother was put to death, and to call it after her name. This was done, and Jayságar Dhol is doubtless the finest specimen of stone architecture in Upper Ásám.

Although the Hindú religion was introduced in 1615, and a number of Bráhmans was procured to teach the observances of their faith, and though in 1654 Chutumla publicly adopted the Hindú faith and encouraged Bráhmans to his court, as well as assumed the Hindú name of Jayadhajia Singh; yet Gadhádhhar Singh is said to have been a Buddhist, to have eaten beef and frogs, and drunk spirituous liquors. His son Rudra Sing, however, was of the Hindú faith from the commencement of his reign.

In Robinson's "History of Asam," p. 168, we find—"Gadhádhhar Singh, *alias* Chututpha, died in 1695, and was succeeded by his son Rudra Sing, *alias* Chuckungpha. In 1699, this prince is said to have founded the fort and city of Rangpúr, where he also caused an extensive tank to be made that still bears his name. In the same year he erected a theatre for the exhibition of sports, denominated Tulatuli. He died suddenly the following year at Gauhatti. Rudra Sing was, without doubt, the greatest of all the Asamese princes: he reduced the whole valley to order, and received the submission of all the hill tribes."

"In an old Asamese bulanji it is said that "Jaymati Koorie was taken into custody by the Lorá Rájá, carried to the place where Jayságar now is, and was caned and whipped to death under a large pípal tree, which was in the same place where the pillar in the centre of the tank now stands."

In a native work, entitled "A History of the Kings of Asam," by Sri Radhanath Bor Borua and Kasinath Tamuli Phúkan, p. 34, we find the following—"On the 14th Phalgún, 1617, (A. D. February 24th, 1695) Rájá Rudra Singh went to the Singree Ghur at Ghargaon, and there assumed the name of Sooklungphaw, and, according to his father's command, memorialized the death of his mother Jaymati Koorie by digging the large tank called Jayságar, and erecting three temples in and about the place where she was murdered. The largest of these temples was dedicated to the



worship of Vishnu, one of the smaller to Siva or Mahadeb, and the other to Durga. The famous works of Rudra Singh's life are, the Matakát Rung-pore, Joysaugor Dhol Pookrie, Rungonath Dhol Pookrie, Phakooah Dhol, Namdang Heel Sanko, Damoru duo heel Sanko, Kerkooteah Allee, Dooberownee Allee, and Matakaroo Allee."

To quote Robinson again, p. 276. "The remains of temples and public buildings, which are so often met with in various parts of the country, testify that the Asamese had once made considerable progress in sculpture. Their productions are, however, not merely void of attraction, they are unnatural and not unfrequently offensive and disgusting." The latter part of this paragraph is hardly correct with regard to Jayságar, only one of the designs being unfit for publication, and that is one of the incarnations of Vishnu in which a boar plays a prominent part. The stone body of the temple is literally covered with very fair specimens of sculpture, the designs and their details being in some instances wonderfully fine and artistic; not an available inch of surface is left undecorated, and the frieze of hunting scenes in the basement is for the most part extremely accurate and life-like.

The body of the building, about twenty-two feet high, supporting the dome, is built of sandstone and carries twelve pinnacles; the dome is of brick-tiles, covered with stucco, which is ornamented by being divided into an immense number of sunk panels, each having a rose in its centre, and is about thirty feet high; and the superstructure of brick, somewhat mutilated, built around an iron centre rod, makes the total height about sixty-five feet above the ground. The bund underneath the temple is composed of large sandstone boulders. These with the stone used in building the temple were probably brought from about Sadiyá by boat, and landed opposite Rang-púr; for there is a good ancient road leading from the Dikko River at that point to the Jayságar tank. The sculptured slabs are very neatly let into the wall and with their surrounding frames are mostly crowded with diaper work and minute carved tracery. The building is octagonal, the four sides facing the cardinal points of the compass are each twenty feet broad, the other four sides have recessed angles. At its west end are two entrance rooms; from the centre one seven steps lead down through a fine stone doorway into the grand room of the temple, which is quite dark and has probably a subterranean chamber as water could be heard running underneath the floor. This room is twenty-three feet across and devoid of ornament excepting the niches; the stone work, as on the outside, reaches up to the foot of the dome which, being devoid of stone, shews the brickwork to the top, the height appearing immense when viewed by magnesium light, although it cannot exceed fifty feet.

All the other buildings are composed of brick tiles, have curved roofs, covered with stucco, generally stone doorways, and in two cases having



series of carvings in sandstone let into the walls on the outside of the buildings. Nearly all are more or less damaged by the frequent earthquakes they have had to withstand.

On the outside of the temple, near the foot of dome, runs a series of tablets, each containing an angel and all having different attitudes, as nearly resembling the angels in European mediæval sculpture as can be well imagined. Amongst the figures in the frieze of hunting scenes near the base of the temple are three unmistakeable Nágás, leading a captive by cords; the neck ornaments, the tightly pinched-in waist, scanty covering, sturdy limbs, and uncovered heads, all indicate their nationality; the weapon in the hand of each resembles the Burmese dhao-luey, and is not such an article as we see carried by the Nágás in this neighbourhood. The vehicle conveying the Rájá is of very curious construction, the wheels being supported by springs on the outside like modern railway carriages, and the single shaft reaches over the horses' back as far forward as its head. This drawing is unfortunately somewhat mutilated, and the details cannot be accurately made out. Camels are frequently represented: these may bear allusion to some event during Mir Jumlah's invasion of Ásám, as there are no such animals now to be found here and the country is quite unsuited to them. Amongst the native sports on grand festivals, elephant fighting probably had a place, as two are shewn carrying riders, and the mahauts are evidently urging the beasts to the combat; one of the elephants has the trunk of the other in its mouth. This is a very spirited and well executed piece of work.

This frieze of hunting and other scenes is undoubtedly the most interesting part of the carvings; coming from the N. W. angle and going round the building to the East we find:—

1. Two armed men on horseback. An old man on foot. Two men sitting under a tree.
2. Two old and two young alligators, having rounded ears like leopards.
3. A deer on its back, a tiger holding it by the throat, two deer and fawn running away.
4. Two men mounted on horses, one carrying a spear, the other a bow, two dogs chasing two deer and a fawn, a man in a tree aiming a gun at the deer.
5. A man on a galloping horse, about to shoot an arrow at a man on an elephant, the latter being suddenly stopped by the mahaut.
6. Two alligators with big ears.
7. Two camels marching, one mounted, the other led by a man on foot, two men on horseback conversing, two animals (dogs?).
8. Two elephants carrying mahaut and rider, the first rider brandishing a sword.



9. (20' face to N.) A tree, under it a man kneeling, apparently wounded, having his back turned to a man about to shoot an arrow at him. Man on galloping horse looking back and shooting an arrow at the man under the tree. Man on horseback lancing a charging buffalo over his horse's left shoulder, he carries a quiver on his back. Man kneeling behind a tree, and man up in a tree, pointing guns at some buffalo. Elephant driven by mahaut going from some buffalo, the rider carries a gun. Man on galloping horse, throwing lance at two running deer and a fawn, two dogs also pursuing the deer. Man in tree pointing gun at some deer. Herd of six large and small elephants. Forest scenery. Two tigers chasing two deer and two fawn, monkey climbing a tree out of the way.

10. Two monkeys on a tree. Man and woman on two walking horses, evidently conversing. Two monkeys on a tree, an old man under it. A tree, on one side a hut with a man in it, a person sitting down on the other side.

11. Two men on galloping horses after a deer and fawn, the one about to shoot an arrow, the other to throw a lance, two dogs pursuing the deer at full speed (very spirited).

12. Two elephants with riders being suddenly stopped by the mahaut's judges, they see No. 13.

13. A tiger holding a deer by its throat having turned it on its back, another deer is dashing off into the jungle.

14. Similar to 7. (? a tiger).

15. Two large and two small alligators, as before.

16. Man on galloping horse shooting arrow at man on elephant, mahaut suddenly stopping it.

17. Two alligators with big ears, as before.

18. (20' face to E.) A monkey on a tree. Man and woman on horseback conversing, not seeing a tiger ahead. A man on tree pointing gun at a tiger that is watching the people approaching. Man on a tree pointing gun at the tiger's rear. Man on galloping horse shooting arrow at the same tiger. Two bears about to fight. Three Nágás leading a prisoner child bound with cords, each armed with a knife. Two monkeys on two trees, two animals (leopards?) about to climb up to them. A monkey on small tree eating a fruit. A bear (?) walking beside two people on horseback. Man walking behind a covered carriage, drawn by two horses, one saddled, a driver kneeling in front. Two people on horses. Two men and four women crowded together behind a covered carriage drawn by two horses, containing a driver, a Rájá, and an attendant who kneels behind. Broken place. Five women dancing, and seven people playing musical instruments, approaching the carriage.

19. Two large and two small alligators with mouths open.



20. Man on horseback, as 16.
21. Two riders, one about to throw lance, the other to shoot an arrow at two deer and a fawn running away. A man on a tree pointing a gun at some deer.
22. Two elephants, as 12.
23. A tiger as 13, a deer and two fawn running away.
24. A repetition of 10.
25. Two alligators as before, with open mouths.
26. Two camels, one mounted, the other led, then two men on horseback brandishing swords, two dogs running.
27. (20' face to S.) A tiger lying down wounded, two men on trees pointing guns at it. Two elephants fighting, biting each others' trunks, carrying mahauts and riders who are urging them on. (Very spirited.) Man kneeling, pointing a gun, and man mounted, also pointing a gun at a tiger attacking a buffalo. Two men on galloping horses, one shooting an arrow at the same tiger, his companion looking back and shooting an arrow. An elephant approaching carrying a mahaut and rider. Two men on galloping horses, one shooting an arrow, the other throwing a lance at two deer running away.
28. Similar to 10.
29. Two large alligators, as before.
30. A repetition of 5.
31. A duplicate of 7.
32. A repetition of 2.
33. Similar to 27.
34. Tiger holding a deer by its throat and turning it on its back, two deer and two fawn running away. A monkey climbing a tree, and a man on a tree aiming a gun at the tiger.
35. Repetition of 12.

What standard of measure may have been used in the construction of these buildings cannot be easily ascertained, but the English foot seems to adapt itself for taking measurements where the *háth*, or cubit, would give some trouble. There is also an indescribable peculiarity in some of the decorations that seems to indicate the hand of an European architect, or at least some one who had some acquaintance with European decorative art: the structure is not ornamented in a purely oriental manner, and although the Asamese style of arch in doorway is prevalent, yet the massive stone perforated blocks for the reception of the heavy door hinges, which are found in every room, look more as if copied from some Roman building than the production of an effeminate race such as the Asamese have been. The brickwork strongly resembles many specimens of Roman architecture now existing in England: large flat tile bricks, the double rows to form arches,



the mortar mixed with broken brick, are identically the same. The solidity of the buildings, some of which, not more than fifteen feet square, have walls five feet thick, would indicate that earthquakes were as prevalent in those days as now, and perhaps more destructive; yet in spite of their massive construction very few have escaped the effects of the shocks, for great rents are visible in nearly every pucca building of any antiquity in this district.

Between Jaysāgar and Sibsāgar are numerous dhols and tombs and a large two-storeyed brick building, called the Rangghar, which is in a fairly perfect state. The smaller buildings are buried in long grass. When an opportunity occurs, a careful investigation shall be made of the most interesting of them.

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*Note on the Chittagong Copper-plate, dated S'aka 1165, or A. D. 1243, presented to the Society by A. L. CLAY, Esq., C. S.—By PRANNA'TH PANDIT, M. A.*

(With a plate.)

The plate, transcript and translation of which have been given below, measures about  $7\frac{1}{2}$  inches in length and 7 inches in breadth, with an extreme thickness of one-eighth of an inch. It has a curvature at the top, which would seem to have been designed to serve the purpose of a handle. The extreme length from the tip of the curvature is over 9 inches. In this space are delineated, on the first face the figure of a crescent surmounted by a sun, symbolical of the gift's enduring\* as long as the sun and the moon shall exist in the heavens; and on the second face, the figure of Vishnu riding on Garuḍa, which would denote that the dynasty was Vaishnava in religion, a fact borne out by the three names mentioned in the plate, which are all synonyms of Vishnu, and also by the fact of the first sloka being addressed to that divinity. The plate is engraved on both sides with characters which bear a close resemblance to those on the Tipara copper-plate, translated by Colebrooke in Vol. IX. of the Asiatic Researches, and Vol. II. of his Miscellaneous Essays; and to use the language there used "the character agrees nearly with that now in use in Bengal; but some of the letters bear a close resemblance to the writing of *Tirhut*."† The engraver has been hard-pressed for space on the second face, and was obliged towards the conclusion

\* Compare *आचन्द्रार्कम् आलाम्* in sloka 6 of the Tipara copper-plate, Colebrooke, Vol. II. p. 243, *आचन्द्रार्काण्यवदितिसमकालीनः* in the Gurjjara grant in J. R. A. S., New series, Vol. I, p. 275. *चन्द्रार्काण्यवदितिसमकालम्* in the Ujjayini plate, Colebrooke, II, p. 308.

† Miscellaneous Essays by H. T. Colebrooke. London, 1837, Vol. II., p. 242.



to diminish the intervals between the lines as well as the size and depth of the letters. The left side of the second face is to a considerable extent worn away, and could not without difficulty be decyphered. I have put an asterisk over letters which are conjectural and enclosed in brackets those which have been apparently omitted by mistake, though they are absolutely necessary to make the sentences intelligible.

Bábu Oomachurn Roy, Treasurer, gives the following account of the finding of the plate in a letter to A. L. Clay, Esq., Officiating Collector of Chittagong, the Society being indebted to the latter gentleman for his forwarding the plate with the whole correspondence.

"The copper plate was found at the time of re-digging a pond in Naçirábád, a village on the south-east corner of the Sadr station of Chittagong. This pond formerly belonged to the Bhats of that village, and it now belongs to a Muhammadan. The plate was also found by a Muhammadan."

The language is Sanskrit Poetry, with the exception of the first sentence and the description of the boundaries of the lands, which are the subject of the gift. The latter are given in prose, which will bear no strict grammatical analysis. It would seem that the description of the dynasty, the donor, and the donee, and the usual formula at the end, were drawn up by the court Paṇḍits, who left the details of the boundaries to be filled in by subordinate officials. For the sake of convenience, I have numbered the couplets which constitute the greater part of the engraving on the plate. The first sloka is in adoration of Damodara, a synonym of Krishna,\* who had been identified with Vishnu long before. The particular synonym is chosen for the sake of a *double entendre*, the reigning king, the donor, being of that name. The second sloka is in praise of the Moon, and from this we may fairly infer that the dynasty claimed to be *Chandra-vāṃsi*, or descended from that luminary. This conjecture is strengthened by the terms यदंशप्रभवन्दुन्दरयशोनिर्भातलोकवशीवन्माः, used in the next sloka. The phrase किञ्चायश्च in the fifth sloka sounds redundant, but I am unable at present to suggest a better reading. The last half of this sloka, which dwells on the blue-black faces of rival kings, sounds very poor and tautologous in the translation, though not so bad when read in the original. The sixth sloka extols with the usual hyperbole the prime minister, under whose superintendence the *sāsana* was drawn up, the king being presumed to be above such petty concerns. It may indeed be possible that the gift was in reality the minister's, though made, as a matter of form, in the king's name. The phrase सयदोदण्डचण्डः does not denote that the minister in question was a veritable Scævola, but is used by the poet in the sense that his left hand alone was more than sufficient to overpower his enemies.

\* For the appellation of Damodara, vide Muir's Sanskrit Texts, Part IV.



For the त्यागवारि of this sloka I might refer to उदकातिसर्गणप्रतिपादित of the Chalukya grant in J. R. A. S., New Series, Vol. I, p. 268 ; दानामुधारया in the Chitradurg plate, where Colebrooke\* has the note—"solemn donations are ratified by pouring water into the hand of the donee." The same inscription employs further on the phrase सहिरण्ययोधारापूर्वकं. In sloka 7, the name of the prime minister is given as *Srimad-datta-maha-mahattaka*, of which compound *Srimad* is the usual honorific prefix ; *datta*, the patronymic ; and *Mahá-mahattaka*, the proper name. The recipient of the gift is *Sri-Prithwi-dhara-Sarmá*, a *Yajurvedi* Brahman. As the *Yajur-veda* is pre-eminently the sacrificial Veda, it is not surprising that a Bráhma-man of this school should be selected as the donee. The amount of the land given away is five Dronas, a term which is thus explained by Colebrooke in a note on the Tipara copper-plate—"A measure of land, still used in the eastern parts of Bengal, originally as much as might be sown with one *dron'a* of seed : for *dron'a* is a measure of capacity. (As. Res. Vol. V., p. 96). The *dron'a*, vulgarly called *dun*, varies in different districts. It may, however, be reckoned nearly equivalent to eight *bighas*, or two acres and two-thirds."† The measure is still prevalent in Eastern Bengal and Chittagong. The last word of the sloka has not been satisfactorily decyphered. The reading adopted and translated is proposed by Bábu Rájendralála Mitra's Shastri. But while on the one hand this leaves the last letter unexplained, to admit an additional one would destroy the metre. The portion in prose gives minute details about the plots of ground given away, but there is little or no hope of the sites being identified, so great has been the mutation of names owing to the Muhammadan conquest. I have in vain looked‡ at the survey map of the district. *Lavanotsavá-srama-sambása-báti*, has not, as far as I am aware, been met with anywhere else. *Lavanotsava* I take to mean some festival connected with the harvest ; *sambása*, I take to mean 'residence ;' *báti*, is compounded here as in *Pushpabáti*, *Udyánabáti*, and the like. This is the most satisfactory account that I can give of the compound, *Lála* means 'red,' and is here used as a term descriptive of the quality of the ground. *Nála* (I supposed a phonetic corruption) is still used in Eastern Bengal to denote arable land in general. I may here mention that in the plate न and ल are written exactly alike.

The succeeding slokas are of frequent occurrence, and something like them is always put at the end of grants. The ninth sloka, for instance, occurs (with the variation of मुक्ता for दत्ता) in the Chalukya grant, at p. 270, Journal, Royal Asiatic Society, New Series, Vol. I ; in the Gurjjara

\* Colebrooke's Miscellaneous Essays, Vol. II, p. 259.

† Colebrooke, II, p. 245.

‡ Mr. Clay instituted enquiries on the spot, but with the same result.



grants, at p. 276, of the same volume; in the Ujjayini grants, at pp. 302, 311, Colebrooke's *Miscellaneous Essays*, Vol. II; in the Nagamangala copperplate, at p. 159 of the *Indian Antiquary*, Vol. II; in the Benares inscription, at p. 451 of the *Asiatic Researches*, Vol. XV; and in the Chat-tisgarh grant, p. 511 of the same volume. In the last instance, the reading is exactly the same as in the present plate. The translation which I have given, differs slightly from those previously given, but I hope mine is the nearest approach to the original.

The tenth sloka occurs in the Benares plate, p. 451 of the *Asiatic Researches*, Vol. XV, and we are told in a note that the same is quoted anonymously in the *Mitdeshará*.

I do not remember whether the eleventh sloka occurs in any other grant, but the same ideas variously expressed are to be found in many. The first part of this sloka as engraved reads चक्षुदक्षलोचं, and I was at first inclined to supply an *ikára* and read it चक्षुदक्षिदक्षलोचं, *i. e.*, "unstable as a swarm of bees in motion"; but considering the frequency of the comparison of human life to a drop of water on a lotus leaf, I thought it better to take the second द to be a mistake of the engraver for ज. I think, we are to ascribe to want of space the fact of the details of the date and the engraver's name being omitted.

Bábu Oomachurn Roy\* conjectures on the supposed ground of the title of Deva ascribed to the kings in this plate that the grant might have been made by a king of Tipara. This conjecture is in itself as slender as that based on the similarity of the character employed to that in the Tipara inscription translated by Colebrooke. Moreover only one of the kings, Madhusudana, has that title in the inscription. Mr. J. Long's analysis of the *Rájámálá*, or Bengali History of the Tipara Royal family throws no light on the present subject, and we must postpone observations on this point till we succeed in securing a copy of the original MS.

I cannot conclude this note without acknowledging the great help I received from Pandit Iswara Chandra Vidyaságara in decyphering the contents of the plate.

\* He says in a letter to Mr. Clay—"I hope I have been able to gather the substance of the inscription. It is to this effect that in ancient times there was in Chittagong a Hindoo king about the year 1166 *Sakabda*, named Purushatham Deb. His son was Madhooshoodan Deb, his son Basudeb Deb, and his son Damudar Deb. This last named Damudar seems to have made a gift of 5 drons of land within certain boundaries to a brahman, this copperplate containing the deed of gift.

"We are told that Chittagong was under the sway of the Tipperah kings and they bore the title of Deb and even now they bear that very title.

"From this it may be fairly concluded that this deed of gift was executed by a king of the Tipperah royal family."



*Transcript of the Chittagong copperplate.*

**शुभमस्तु शकाब्दाः २१६५ ॥**

देवि प्रातरवेहि नन्दनवनान्मन्दः कदम्बानिलो  
 वाति व्यसकरः शशीति लतकेनान्नाय कौतूहली ।  
 तत्कालस्त्रलदङ्गभङ्गिमचलामालिङ्ग सखीं बला-  
 दालोलाननविम्बचुम्बनपरः प्रीणातु दामोदरः ॥ १ ॥  
 अम्भोजवीहरणपिशुनः प्रेमभूः कैरवानां  
 चूडारलं चिपुरजयिनः केलिकारो निश्वायाः ।  
 लीलागारं कुसुमधनुषो बन्धुरम्भोनिधीनां  
 श्रीमानेको जयति जगदानन्दकारी नृगाङ्गः ॥ २ ॥  
 यदंशप्रभवेन्दुसुन्दरयशोनिधैतिलोकचयी-  
 बन्धोः श्रीपुत्रपोत्तमस्य तनयः प्रौढप्रतापोत्तरः ।  
 देवः श्रीमधुसूदनाख्यनृपतिर्येनापि सेवानमत-  
 भूमीपालललाटघृष्टचरणः श्रीवासुदेवोऽजनि ॥ ३ ॥  
 तस्यात्मजः प्रणतराजशिरामणिश्री-  
 किर्मीरिताङ्गिनखचन्द्रमयूखमालः ।  
 प्रज्ञाप्रसाधितमहीदयितप्रभुः श्री-  
 दामोदरः सकलभूपतिचक्रवर्ती ॥ ४ ॥  
 यस्यैत(द्) यशमोज्ज्वलेन भुवनं निष्कालिकं कुर्वता  
 श्वसुखीजनलोचनाञ्जनकणसारं न तत् शेषितं ।  
 किञ्चायच्च विपक्षराजकमुखे तात्कालिकः कालिमा  
 नीलीरागभरधिराय कलुषप्रागस्यमभ्यस्यति ॥ ५ ॥  
 एतस्याजन्मरुद्धयसनविजयिनः सख्यदोर्दण्डचण्डो  
 लक्ष्मीविश्रामभूमिः प्रतिनृपतिशिरः श्रेष्ठराधाधिनाङ्गिः ।  
 अत्रान्तत्यागवारिस्त्रपितवसुमतीकल्पवृक्षः स एकः  
 सर्वामात्यैकमुख्यो जयति गुणवरः शासनस्योपनेता ॥ ६ ॥  
 सर्वामात्यशिरःशिरिपकुसुमप्रत्यर्चिताङ्गिद्वय-  
 श्रीमदत्तमहामहत्तकमुखादेशेन ताधीकृतां ।  
 पञ्चद्वेणभुवं द्विजाय स ददौ राजा यजुर्वदिने  
 श्रीष्टब्धीधरशर्मणे सुलतिने डाम्मारडामेऽर्थिने ॥ ७ ॥  
 यथा प्रसिद्धम्परमीमया भुवो द्वेणचय कामनपौण्ड्रयाके ।  
 तथैव भूद्वेणयुगं प्रसिद्धं केतवृपालाभि(ध)पण्डिकायां ॥ ८ ॥



यत्र डाम्बार (डा)मं कामनपौण्ड्रिया ग्रामे पूर्वे राजपथभीमा दक्षिणे लवणोत्सवा  
 \* \* \* \* \*  
 श्रमसम्भवावाटीभीमा पश्चिमे नन्नापाख्यभीमा उत्तरे शतचङ्गाभीमा एवं चतुःभीमावच्छिन्न-  
 सवासुलालभूद्रेण २ तथा केतद्रपालायामे पूर्वे लम्बशामनभीमा दक्षिणे नन्नापाख्यभीम  
 पश्चिमे गोपथभीमा उत्तरे शतचङ्गाभीमं एवं चतुःभीमावच्छिन्नसवान्ना भूद्रे १ तथा ग्रामे  
 वाघपोखिरा दक्षिणपश्चिम उत्तरे सवान्ना भूद्रे १ द्वा भू२(ए)वं ग्रामद्वये सवान्ना भूद्रेण ५  
 भवन्ति चात्र धर्मानुसंशिनः श्लोकाः ॥

वज्रभिर्यमुधा दत्ता राजभिः सगरादिभिः ।  
 यस्य यस्य यदा भूमिसस्य तस्य तदा फलं ॥ ९ ॥  
 भूमिं यः प्रतिगृह्णाति यस्य भूमिं प्रयच्छति ।  
 उभौ तौ पुण्यकर्माणौ नियतं स्वर्गगामिनौ ॥ १० ॥  
 चलदलजललोलं जीवनं यौवननत  
 धनमिदमनुचिन्त्यायान्ममेतत् कृतज्ञाः ।  
 कुर्वन् कुर्वन् चित्तं श्रेयसे पुण्यभाजं  
 भवति हि प(र)कीर्तिः पालिता सा निजेव ॥ ११ ॥

#### Translation.

May the year of Saka 1165 be prosperous. "Goddess! know it to be morning, the gentle breeze blows from *Kadamba* trees, and the moon (is) pale-beamed." Glad with this simulated speech and repeatedly kissing the agitated disc of the face of *Lakshmi*, [who is steady in him], after forcibly embracing her then abandoned limbs, may *Damodara* delight you!

Cruel in robbing the lotus of her beauteous prosperity; the object of the *Kairavas'* love; the jewel in the diadem of the conqueror of *Tripura*; the husband of the night; the festive abode of *Kandarpa*; and the friend of the oceans; victory to the beautiful *Mrigānka*, the sole gladdener of the universe.

The son of *Sri Purushottama*, the friend of the three worlds whitened by the fame, beauteous as the moon, of his race, was the king named *Sri Madhusudana Deva*, by whom too was procreated *Vāsudeva*, with his feet worn by the foreheads of kings bending in homage.

His son, with the garlands of the rays of his moon-like nails variegated by the reflections from the gems on the diadems of bending kings, was *Dāmodara*, lover and lord of the wisely ruled earth and *Chacracartti* over all kings.

Whose bright fame making this earth devoid of blackness, never put a stop to the rain of the collyrium particles in the eyes of the wives of his enemies. And what, too, the blackness, full dark blue, which was then on the face of hostile kings practises for aye, eminence in turbidity.

Victory to the framer of this *Sāsana*, the sole head of all ministers of this (king who was) from birth victorious over battle's calamity; who (minister) was possessed of excellent qualities; mighty with his left arm; the site of *Lakshmi's* repose; with his feet adored by the crests of hostile kings, a *Kalpataru* bathing the earth with ceaseless donative libations.

That king (*Dāmodara*) gave five *dronas* of land to the virtuous *Yajurvedi Brāhmaṇa Sri Prithidhara Sarmā*, who asked for them in *Dambara-dāma*, detailed in this



edict by orders from the mouth of *Srimaddatta-maha-mahattara*, whose feet are worshipped with the *Sirisha* flowers on the heads of all ministers.

Three *dronas* of land in Kamanpanudiyaka and a couple of *dronas* in the village named Ketangapala, according to extreme boundaries detailed herein.

Where *Dambāra-dāma* in the village *Kāmanopanudiyā* bounded east by the royal road, on the south by *Lavanotsavārsāramasambāsābātī*, on the west by *Labrāpālya* land, on the north by *Mritaccharha*, thus bounded on four sides, *Lala* land with *Vāsta*, three *dronas*. So in the village *Ketangapālā*, on the east *Lambasāsana* land, on the south *Labrāpālya* land, on the west a cattle-track, on the north *Mritaccharhā*, thus bounded on four sides one *drona* of *savāla* land. So, bounded south, west and north village *Bāghpo'khira*, one *drona* of *savāla* land. Two plots, 2. Thus in the two villages, five *dronas* of *savāla* land. About this there are slokas declaring a religious duty.

By many kings, Sagara and others, land has been given. As long as the land lasts, each receives the fruit. He who accepts land, as well as he who gives it away, both these, performers of virtuous deeds, certainly go to heaven.

Life, youth, and riches are unstable as the water (drop) on the (lotus) leaf moved (by the wind). Therefore reflecting on this, and knowing what has been done, make, oh make, your hearts participate in virtuous deeds for the attainment of final happiness. The fame of others, when cherished, becomes like (our) own.

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*The Etymology of Local Names in Northern India, as exemplified in the District of Mathurā.—By F. S. GROWSE, M. A., B. C. S.*

The following article is an attempt to investigate the principles upon which the local nomenclature of Upper India has been and still is being unconsciously constructed. The inquiry is one of considerable importance to the student of language; but it has never yet been approached in a scientific spirit, and the views which are here advanced respecting this *terra incognita* in the philologist's map must be regarded as a first exploration, which is unavoidably tentative and imperfect. Many points of detail will possibly demand future rectification; but the general outline of the subject, the fixed limits within which it is contained and some of its more characteristic features of interior development have, it is hoped, been satisfactorily ascertained and delineated with a fair amount of precision.

It is not to be inferred from this prelude that a subject of such obvious interest has hitherto been totally neglected. On the contrary, it has given rise to a vast number of speculations, but all of the most haphazard description. And this from two causes; the first being a perverse misconception as to the vernacular language of the country; and the second, the absence of any list of names sufficiently complete to supply a basis for a really thorough induction. The former error it is the special object of this paper to dispel; the difficulty involved in want of materials having already been, partially at least, removed by the village catalogues, published in Part II



of 'Mathurá, a District Memoir,' from which all the illustrations of my present argument will be drawn.

It seems a very obvious truism and one that requires no elaborate defence to maintain that the names of a country and of the places in it should *primá facie* and in default of any direct evidence to the contrary be referred to the language of the people who inhabit them rather than to any foreign source. This, however, is the very point which most writers on the subject have failed to see. In order to explain why the founder of an Indian village gave his infant settlement the name by which it is still known among his descendants, our laborious philologists have ransacked vocabularies of all the obscurest dialects of Europe, but have left their Sanskrit and Hindi dictionaries absolutely unopened.

A more curious illustration of a deliberate resolve to ignore obvious facts for the sake of introducing a startling theory based on some obscure and utterly problematical analogy could scarcely be found than is afforded by Dr. Hunter in his dissertation on non-Aryan languages. In this he refers the familiar local termination *gáñw* (which *argumenti gratiá* he spells *gáng* or *gaong*, though never so written in any Indian vernacular) to the Chinese *hiang*, the Tibetan *thiong*, the Lepcha *kyong*, &c., &c., and refuses to acknowledge any connexion between it and the Sanskrit *gráma*. Yet as certainly as Anglo-Saxon was once the language of England, so was Sanskrit of Upper India; and it seems as reasonable to deny the relationship between *gráma* and *gáñw* as between the English affix *bury* or *borough* and the Saxon *burgh*. The formation is strictly in accord with the rules laid down by the Prákrit grammarians, centuries before the word *gáñw* had actually come in existence. Thus by Vararuchi's Sutra—*Sarvatra la-va-rám* III, 3—the letter *r* when compounded with another consonant, whether it stands first or last, is always to be elided; as we see in the Hindi *bát* for the Sanskrit *vártá*, in *kos* for *krosa*, a measure of distance, and in *pem* for *preman*, love. So *gráma* passes into *gáma*, and whether this latter form or *gáñw* is used depends simply upon the will of the speaker; one man calls the place where he lives Naugáma, another calls it Naugáñw, in the same way as it is optional to say Edinbro' or Edinborough. For in Hindi as in Sanskrit a nasal can always be inserted at pleasure, according to the memorial line—*Savindukávindukayoh syád abhede na kalpanam*: and the distinction between *m* and *r* or *w* has always been very slightly marked: for example, *dhimar* is the recognized literary Hindi form of the Sanskrit *dhivar*, and at the present day villagers generally write *Bhamáni* for *Bhawáni*, though the latter form only is admitted in printed books. If speculation is allowed to run riot with regard to the paternity of such a word as *gáñw*, every step in the descent of which is capable of the clearest proof, then philology is still a science of the future,



326 F. S. Growse—*The Etymology of Local Names in N. India*. [No. 4, and the whole history of language must be rewritten from the very commencement.

Perhaps of all countries in the world, northern India is the one which for an investigation of this kind is the most self-contained, and the least in need of alien analogies. Its literary records date from a very remote period; are in fact far more ancient than any architectural remains or even than any well authenticated site, or definitely established era, and they form a continuous and unbroken chain down to this very day. From the Sanskrit of the Vedas to the more polished language of the Epic poems, and through the Prákrit of the dramatists, the old Hindí of Chand and the Braj Bhásha of Tulsi Dás, down to the current speech of the rural population of Mathurá at the present time, the transitions are never violent, and at most points are all but imperceptible. The language, as we clearly see from the specimens which we have of it in all its successive phases, is uniform and governed throughout by the same phonetic laws. And thus, neither from the intrinsic evidence of indigenous literature, nor from the facts recorded by history, is it permissible to infer the simultaneous existence in the country of an alien-speaking race at any period to which it is reasonable to refer the foundation of places that still bear a distinctive name, prior to the Muhammadan invasion. The existence of such a race is simply assumed by those who find it convenient to represent as non-Aryan any formation which their acquaintance with unwritten Aryan speech in its growth and decay is too superficial to enable them at once to identify.

As local etymology is a subject which can only be investigated on the spot and therefore lies beyond the range of European scholars, its study is necessarily affected by the prejudices peculiar to Anglo-Indian officials, who are so accustomed to communicate with their subordinates only through the medium of Urdú that most of them regard that *lingua franca* as being really what it is called in official parlance, the vernacular of the country. This familiarity with the speech of the small Muhammadan section of the community, rather than with that of the Hindu masses, causes attention to be mainly directed to the study of Persian and Arabic, which are considered proper to the country, while Sanskrit is thought to be utterly dead, of no interest save to professional scholars and of no more practical import in determining the value of current phrases than Greek or Hebrew.

The prejudice is to be regretted, as it frequently leads writers, even in the best informed London periodicals, to speak of India as if it were a purely Muhammadan country, and to urge upon the Government, as highly conciliatory, measures which if taken would most effectually alienate the sympathies of the vast majority.

Neither Urdú, Persian, nor Arabic, is of much service in tracing the derivation of local names, and it is hastily concluded that words which



are unintelligible when referred to those recognized sources must therefore be non-Indian, and may with as much probability be traced up to one foreign language as another. Any distortion of a village name which makes it bear some resemblance to a Persian or Arabic root, is ordinarily accepted as a plausible explanation; while its deduction from the Sanskrit by the application of well-established but less popularly known phonetic and grammatical laws is stigmatized as pedantic and honestly considered to be more far-fetched than a derivation from the Basque or the Lithuanian.

This may seem an exaggerated statement; but I speak from personal experience and with special reference to some criticisms communicated to me by a distinguished Civilian of the Panjáb, who thought the identification of Maholi with Madhupuri far more improbable than its connection with the Basque and Toda word *uri*, which is said to mean 'a village.'

Such philological vagaries have their birth in the unfortunate preference for Urdú, which the English Government has inherited from the former conquerors of the country, though without any of their good reasons for the preference. They are further fostered by a wide-spread idea as to the character of the people and the country, which in itself is perfectly correct and wrong only in the particular application. The Hindus are an eminently conservative race, and their civilization dates from an extremely remote period. It is, therefore, inferred that most of their existing towns and villages are of very ancient foundation, and if so may bear names to which no parallel can be expected in the modern vernacular. This hypothesis is disproved by what has been said above as to the continuity of Indian speech: it is further at variance with all local traditions. The present centres of population, as any one can ascertain for himself, if he will only visit the spots instead of speculating about them in his study, are almost all subsequent in origin to the Muhammadan invasion. When they were founded, the language of the new settlers, whatever it may have been in pre-historic times, was certainly not Turanian, but Aryan as it is now; and though any place, which had previously been inhabited, must already have borne some name, the cases in which that old name was retained, would be very rare. Thus, it may be remarked in passing, the present discussion supplies no ethnical argument with regard to the original population of the country. The names, once regarded as barbarous, but now recognized as Aryan, must be abandoned as evidence of the existence of a non-Aryan race; but at the same time, since they are essentially modern, they cannot be taken as supporting the counter-theory. The names of the rivers, however, which also are mostly Aryan, may fairly be quoted as bearing on the point; for of all local names these are the least liable to change, as we see in America and our Colonies, where it is as exceptional to find a river with an English name as it is to find a town with an Indian one.





Moreover, Hindu conservatism, though it doubtless exists, is developed in a very different way from the principle known by the same name in Europe. Least of all is it shewn in any regard for ancient buildings, whether temples or homesteads. Though Christianity is a modern faith as compared with Hinduism, and though the history of English civilization begins only from a time when the brightest period of Indian history had already closed, the material evidences of either fact are found in inverse order in the two countries. There is not a single English county which does not contain a longer and more venerable series of secular and ecclesiastical edifices than can be supplied by an Indian district, or it might even be said by an entire Presidency. Thus the temple of Gobind Deva at Brindában, which is popularly known in the neighbourhood as 'the old temple' *par excellence*, dates only from the reign of Akbar, the contemporary of Elizabeth, and is therefore far more modern than any single village church in the whole of England, barring those that have been built since the revival by the present generation. The same also with MSS. The Hindus had a voluminous literature while the English were still unable to write; but at the present day in India a MS. 200 years old is more of a rarity than one five times that age in England. This complete disappearance from the surface of all material records of antiquity is no doubt attributable in great measure to the operation of the two most destructive forces in the known world, *viz.* white ants and invaders, but the Hindus themselves are not altogether free from blame in the matter. As if from a reminiscence of their nomadic origin, with all their modern superstitious dislike, to a move far from home is combined an inveterate tendency to slip away gradually from the old landmarks. The movement is not necessitated by growth of population, which as in London for instance can no longer be contained within the original city bounds, but is a result of the Oriental idiosyncrasy that makes every man desire not, in accordance with European ideas, to found a family or restore an old ancestral residence, but rather to leave some building exclusively commemorative of himself, and to touch nothing that his predecessors have commenced lest they should have all the credit of it with posterity. The history of England, which runs all in one cycle from the time of its first civilization, affords no ground for comparison; but in mediæval Italy the course of events was somewhat parallel, and, as in India, a second empire was built up on the ruins of a former one of equal or greater grandeur and extent. In it we find the modern cities retaining under some slight dialectical disguises the very same names as of old and occupying the same ground: in India on the other hand, there is scarcely an historic site, which is not now a desolation. Again, to pass from political to merely local disturbances: when London was rebuilt after the Great Fire, its streets in spite of all Wren's remonstrances were laid out exactly as be-



fore, narrow and irregular as they had grown up piece by piece in the course of centuries, and with even the churches on their old sites, though the latter had become useless in consequence of the change in the national religion, which required one or two large arenas for the display of pulpit eloquence rather than many secluded oratories for private devotion. When a similar calamity befell an Indian city, as it often did, the position of the old shrines was generally marked by rude commemorative stones, but the people made no difficulty about abandoning the exact sites of their old homes, if equally eligible spots offered themselves in the neighbourhood.

The same diversity of conservative ideas runs through the whole character: the Hindu quotes the practice of his father and grandfather and persuades himself that he is as they were, and that they were as their forefathers, unconscious of any change and ignoring the evidence of it that is afforded by ancient monuments, both literary and architectural. The former he prizes only for their connexion with the sect to which he himself belongs; whatever is illustrative of an alien faith he consigns to destruction without any regard for its history or artistic significance; and in an ancient building, if it has fallen into disuse, he sees no beauty and can take no interest; though this can scarcely be from the feeling that he can easily replace it with a better, a conviction which led our mediæval architects to destroy without compunction any part of an earlier Cathedral, however beautiful in itself, which had become decayed or too small for later requirements. In all these matters, England is far more critically conservative; believing in nothing, we tolerate every thing; and profoundly distrusting our own creative faculties, preserve as models whatever we can rescue from the past, either in art or literature.

These reflections may seem to wander rather far from the mark; but they explain the curious equipoise that prevails in the Indian mind between a profound contempt for antiquity and an equally profound veneration for it. The very slight regard in which ancient sites are held is illustrated by the use of the terms 'Little' and 'Great' as local prefixes. In consequence of the tendency to shift the centre of population, these seldom afford information as to the comparative area and importance of the two villages so distinguished: most frequently the one styled 'Little' will be the larger of the two. In some cases the prefix 'Great' implies only that when the common property was divided among the sons of the founder, the share so designated fell to the lot of the eldest; but ordinarily it denotes the original village site, which has been wholly or at least partially abandoned, or so diminished by successive partitions that it has eventually become the smallest and least important of the group.

The foregoing considerations will, I trust, be accepted as sufficiently demonstrating the reasonableness of my general position that local names



in Upper India are, as a rule, of no very remote antiquity and are *primæ facie* referable to Sanskrit and Hindi rather than to any other language. Their formation has certainly been regulated by the same principles that we see underlying the local nomenclature of other civilized countries, and we may therefore expect to find them falling into three main groups, as follows :—

- I. Names compounded with an affix denoting place.
- II. Names compounded with an affix denoting possession.
- III. A more indefinite class, including all names without any affix at all; such words being for the most part either the name of the founder, or an epithet descriptive of some striking local feature.

Running the eye over the list of villages in the Mathurá district, we can at a glance detect abundant illustrations of each of these three classes. Thus under Class I come such names as Nának-pur, Pati-pura, Bich-puri, where the founder's name is combined with the local affix *pur*, *pura*, or *puri*, signifying 'a town.' So also, Nau-gáma, Uñcha-gánw, Badan-garh, Chamar-garhi, Rúp-nagar, Pál-kherá, Brinda-ban, Ahalya-ganj, Rádhá-kund, Mangal-khoh, Mall-sarái, and Nainu-patti. In all these instances both the local affix is easy to be recognized as also the word to which it is attached.

Of Class II the illustrations are not quite so obvious and will mostly require special elucidation; but some are self-evident, as for example Bhúre-ká, where the affix is the ordinary sign of the genitive case; Ráne-rá, where it is the Mārwarí form of the same; and Pipal-wára, where it represents the familiar *wárá*.

Under Class III come first such names as Súraj, Misri, and Gaju, which are known to have been borne by the founders; and under the second subdivision, Gobardhan, 'productive in cattle'; Sanket, 'a place of assignation'; Khor, 'an opening between the hills'; Basai, 'a colony'; and Pura, 'a town,' indicative of a period when towns were scarce, with many others of similar character.

Looking first for names that may be included under Class I., we find that by far the most numerous variety are those compounded with the affix *pur*. This might be expected, for precisely the same reason that 'ton' is the most common local ending in England. But we certainly should not expect to find so large a proportion unmistakably modern, with the former part of the compound commemorating either a Muhammadan or a Hindu with a Persian name, or one who can be proved in some other way to have lived only a few generations ago, and with scarcely a single instance of a name that can with any probability be referred to a really ancient date. As this fact is one of considerable importance to my argument, I must proceed to establish it beyond all possibility of cavil by passing in review the entire series of names in which the ending occurs in each of the six parganas of the district.



The Kosi pargana comprises 61 villages, of which 9 end in *pur*; *viz.* 'Aziz-pur, Hasan-pur, Jalál-pur, Lál-pur, Nabí-pur, Pákhār-pur, Rám-pur, Sháh-pur, and Sháh-zád-pur. Six of these are unmistakably post-Muhammadan, one is apparently so, and two are of quite uncertain date.

In the Chhátá pargana there are 111 villages, and 16 of them have the *pur* ending; *viz.* Adam-pur, Akbar-pur, Bá-zid-pur, Deva-pura, so called from a 'temple' of Gopál, built by Muhkam Sinh, the ancestor of the present proprietors, whose Arabic name proves that he lived not many generations ago; Ghází-pur, Gulál-pur, Jait-pur, Jamál-pur, Khán-pur, Lár-pur; Mán-pur, on the Barsána range, so called from the Mán Mandir, the first erection of which cannot date from further back than the transfer of Rádhá's chief shrine from Rával to Barsána, which took place in the 15th or 16th century A. D.; Pir-pur, Sayyid-pur, Tatár-pur, Háji-pur, and Kamál-pur. Of these 16 names, 12 are unquestionably modern, and of the remaining 4, nothing can be said with certainty either one way or the other.

Of the 163 villages in the Mathurá pargana, as many as 32 have the *pur* ending; *viz.* Alha-pur, said by local tradition to have been founded and so named only 200 years ago (the founder's descendants are still on the spot and most unlikely to detract from the antiquity of their family) A'zam-pur and Bákir-pur, both founded by A'zam Khán Mir Muhammad Bákir, who was Governor of Mathurá from 1642 to 1645; Bhavan-pura; Bija-pur, founded 200 years ago by Bijay Sinh Thákur, on land taken from the adjoining village of Nahrauli; Daulat-pur; Daum-pura, one of 11 villages founded by the sons of a Ját named Nainu at no very remote period, since the share which fell to the eldest of the sons is distinguished by the Persian epithet *kalán*; Giridhar-pur, probably the most ancient of the series, but still dating from times of modern history, having been founded by Giridhar, a Kachhwáha Thákur of Satoha, whose ancestors had migrated there from Amber; Gobind-pur; Gopál-pur; Hakím-pur; Jamál-pur; Jati-pura, founded by Gosain Bitthal-náth, the son of Vallabháchárya of Gokul, commonly called Jati Jí, about the year 1550 A. D.; Jay Sinh-pura, founded by Sawái Jay Sinh of Amber about the year 1720 A. D.; Kesopur, so called from the famous temple of Kesava Deva, a fact which would sufficiently account for the name remaining unchanged, even though of ancient date; Lálpur, founded by a Thákur named Lalu, a member of the Gaurua clan, which is confessedly of late origin; Lár-pur, founded only a few generations ago by a Tarkar Thákur, Lárám; Madan-pura, founded by an ahir from the old village of Karnaul; Mádhó-pur, dating from 300 years ago, when it was formed out of lands taken from the adjoining villages and given to a Hindu retainer by Salím Sháh; Mírzá-pur; Muhammad-pur; Mukund-pur, so called after a Mahratta founder; Murshid-pur founded by Murshid Kulí Khán, who was Governor of Mathurá in 1636 A. D.; Nabí-pur founded by



'Abd-un-Nabí, Governor from 1660 to 1668; Panna-pur founded in 1725 A. D.; Ráj-pur, near Brindá-ban, so named with reference to the Ráj-Ghát, by a Sanádh Bráhmaṇ from Kámar in the 16th century; Rám-pur, named after the Rám-tál, a place of pilgrimage there; Rasúl-pur; Salim-pur, dating from the reign of Salim Sháh; Askar-pur, a modern alternative name for Satoha; Sháh-pur, and Dhak-pura. Of these 32 names, there are only five as to which any doubt can be entertained; all the remainder are clearly modern.

In the Mát pargana are 141 villages, and 41 end in *pur*; viz., Abhay-pura, settled by a Ját, Abhay Síṅh, from Kaulána; Ahmad-pur; Akbar-pur, Amán-ullah-pur; Badan-pur; Baikunth-pur, founded according to local tradition 300 years ago; Baland-pur, founded in the 17th century by a Ját named Balavant; Bali-pur, founded by Bali, a Ját from Bájana about 1750 A. D.; Begam-pur; Bulak-pur; Chand-pur, of modern Ját foundation; Daulat-pur; Faridun-pur; Fíroz-pur; Hamza-pur; Hasan-pur; Ináyat-pur; Ja'far-pur; Jahángír-pur; Ját-pura, a modern off-shoot from the adjoining village of Shal; Khán-pur; Khwájá-pur; Lál-pur, founded by a Ját from Parsauli; Makhdúm-pur; Mír-pur; Mubárah-pur; Mu'in-ud-dín-pur; Nabí-pur; Nának-pur, a modern off-shoot from Musmina; Nausher-pur; Núr-pur; Pabbi-pur; Pati-pura, a modern colony from the Ját village of Dune-tiya; Ráe-pur, recently settled from Musmina; Sadik-pur; Sadr-pur; Sakat-pur; Sikandar-pur; Suhág-pur; Sultán-pur, and Udhan-pur. As to the foundation of 6 out of these 41 villages nothing is known; the remaining 35 are distinctly ascertained to be modern.

Of the 203 villages in the Mahá-ban pargana, 43 have the ending *pur*; viz., 'Abd-un-Nabí-pur; 'Alí-pur; Amír-pur; Islám-pur; Bahádur-pur; Balarám-pur, recently founded by Sobhá Ráe Kayath; Banárasí-pur, founded by a Bráhmaṇ Banárasí, who derived his own name from the modern appellation of the sacred city called of old Váránasí; Bhankar-pur; Bich-pur, of modern Ját foundation; Daulat-pur; Fath-pura; Ghiyás-pur; Gohar-pur; Habib-pur; Hayát-pur; Hasan-pur; Ibráhím-pur; 'Isá-pur, founded by Mírzá 'Isá Tarkhán, Governor of Mathurá in 1629 A. D.; Jádun-pur; Jagadís-pur, founded by a Parásar, Jagadeva, whose descendants are still on the spot and claim no great antiquity; Jamál-pur; Jogi-pur; Kalyán-pur; Kásim-pur; Khán-pur; Kishan-pur, recently settled from the village of Kárah; Lál-pur; Manohar-pur; Mohan-pur; Mubárah-pur; Muzaffar-pur; Nabí-pur; Nasír-pur; Núr-pur; Ráe-pur; Sayyid-pur; Shiháb-pur; Sháh-pur; Shahzád-pur; Sher-pur; Tayyib-pur, and Zakariya-pur. Of these 43 villages, 35 are certainly quite modern; as to the remaining 8 nothing can be affirmed positively.

The 6th and last pargana, Sa'dabad, contains 129 villages, of which 31 have the ending *pur*; viz., Abhay-pura, of modern Ját foundation; Bágh-



pur, founded 300 years ago by a Ját named Bagh-ráj; Bahádur-pur; Bijal-pur; Chamar-pura; Dhak-pura; Fathullah-pur; Ghátam-pur, founded in the reign of Sháhjahán; Hasan-pur; Idal-pur; Mahábat-pur; Makan-pur; Mánik-pur, of modern Ját foundation; Mír-pur; Náráyan-pur, named after a Gosain of modern date, Náráyan Dás; Násir-pur; Nasír-pur; Nan-pura; Rác-pura, of modern Thákur foundation; Rám-pura, recently settled from Sahpau, by a Bráhmaṇ named Mán Mall; Rashíd-pur; Sala-pur, founded by a Bráhmaṇ named Sabala; Salím-pur; Samad-pur, settled not many generations ago by a Ját named Sávadhán; Sarmast-pur; Sháhbáz-pur; Sher-pur; Sithara-pur, a modern off-shoot of Garúmra; Sultán-pur; Táj-pura and Zari-pura. Of these 31 names, 5 are doubtful, the other 26 are proved to be modern.

Adding up the results thus obtained we find that there are in the whole district 172 villages that exhibit the termination *pur*, and of these as many as 141 are either obviously of modern origin, or are declared to be so by local tradition. It is also worthy of notice that in the above lists there has frequently been occasion to mention the name of the parent settlement from which a more recent colony has been derived; but in no single instance does the older name shew the *pur* ending. Yet *pura* or *puri* is no new word, nor is its use as a local affix new; on the contrary we have the clearest literary proof that it has been very largely so employed from the very commencement of the Aryan occupation of India. What then has become of all the older names in which it once appeared? It is inconceivable that both name and place should in every instance have been so utterly destroyed as not to leave a trace behind; and we are thus forced to accept the alternative conclusion that the affix has in course of time so coalesced with the former part of the compound, that it ceases to be readily distinguishable from it. Now of names that are presumably ancient, it will be found that a considerable proportion terminate in *oli*, *auli*, *auri*, *aura*, or *aula*. Thus, deducting from the 61 villages in the Kosi pargana, the nine that have the modern termination *puri*, we have 52 left and among that number 7 are of this character; *viz.*, Banchauli, Chacholi, Chandausi, Mahroli, Sánchauli, Sujauli, and Thmaula. Again, of the 95 villages that remain in the Chhátá pargana after deduction of the 16 ending in *puri*, 15 have the *oli* affix: *viz.*, Achori, Astoli, Baroli, Bharauli, Chaksauli, Dáhroli, Darauli, Gangroli, Lódhau, Mangroli, Parsoli, Pilhora, Rankoli, Rithora, and Tároli. Without continuing the list in wearisome detail through the other four parganas of the district, it will probably be admitted that, in earlier times, *oli* was as common a local affix as *puri* in modern times, and must represent some term of equally general and equally familiar signification. To proceed with the argument: these names, though as a rule older than those ending in *puri*, are still many of them of no great antiquity and can be proved to belong to



an Aryan period, when the language of the country was in essentials the same as it is now and the people inhabiting it bore much the same names as they do still. Thus Sanchauli is derived from Sanchi Devi who has a temple there; Sujáuli from a founder Suján, whose descendants are still the proprietors, and Parsoli and Tárolí from founders named respectively Parsa and Tára. It may be presumed with absolute certainty that these people, bearing such purely Indian names, whether they lived 5, 10, or 15 generations ago, knew no language but their own vernacular, and could not borrow from any foreign tongue the titles by which they chose to designate their new settlements. Thus Dr. Hunter, and those who have followed him in his speculations, may be correctly informed when they state that in Tamil, or Telugu, or Toda, or even in Basque there is a word *uri*, or *uru*, or *ur*, which means 'village'; but yet if this word was never current in the ordinary speech of Upper India, the founders of the villages quoted above cannot possibly have known of it. The attempt to borrow such a name as Sujáuli or Maholi directly from the Basque is, when viewed under the light of local knowledge, really more absurd than to derive Cannington from *Kanhay*, or Dalhousie from *Dala-hási*, 'with pleasant foliage'. The misconception, as already observed, has arisen from the erroneous idea that all village names are of remote antiquity and may therefore be illustrated by philological analogies collected from all parts and ages of the world. In truth, *uli* or *uri* is simply *puri* with the initial consonant elided. Such an elision, removing as it does the most distinctive element in the word, may appear at first sight highly improbable: it is, however, in strict accord with the rules of Hindi formation. The two first *sútras* of the second Book of Váraruchi's *Prákrita-Prakása* in the clearest manner direct it to be made. The text stands thus:

(1.) *Ayuktasyánádau* (2.) *Ka-ga-cha-ja-ta-da-pa-ya-vám práyo lopah.* That is to say, the consonants k, g, ch, j, t, d, p, y, and v, when single and non-initial, are generally elided. And as a convincing proof that this is no mere grammatical figment, but a practical rule of very extensive application, take the following familiar words, in which its influence is so obvious as to be undeniable. By the elision of the prescribed consonant we obtain from the Sanskrit *súkar*, the Hindi *súar*, 'a pig'; from *kokila*, *koil*, 'the cuckoo'; from *súchi*, *súi*, 'a needle'; from *tátá*, *táu*, 'a father's elder brother'; from *pada*, *páo*, 'a quarter'; from *kúpa*, *kúa*, 'a well'; from *Prayág*, *Prág*, the Hindi name of Alláhábád; and from *jíva*, *jía*, 'life.' The rule, it is true, provides primarily that the letter to be elided must be non-initial; but one of the examples given in the text is *su uriso* for *su purusha*, 'a good man'; where the *p* is still elided although it is the initial of the word *purusha*. This the commentator explains by declaring that "the initial letter of the last member of a compound must be considered as non-initial."



Thus the mystery is solved, and Karnaul is at once seen to be Karna-pur; Karauli, Kalyán-puri; Taroli, Tárá-puri; and Sujáuli, Suján-puri.

This practical application of the Prákrit Grammarian's rule was first stated in my 'Mathurá, a District Memoir,' published towards the close of last year. In my own mind, it was so firmly established as an indisputable fact, and possessed in its extreme simplicity at least one of the great merits of all genuine discoveries, that I stated it very briefly and thought it unnecessary to bring forward any collateral arguments in its support. But I find that I much under-rated the strength of inveterate prejudices; for with the exception of one reviewer in a London scientific journal, all other critics seemed to regard my theory as the mere outcome of unpractical pedantry. I have therefore on the present occasion taken great pains to omit nothing, and I cannot believe that any one who will submit to the trouble of following my argument as I have now stated it, will still maintain "that the direct derivation from the Turanian roots *aul*, *ur*, *uri* is more probable than the forced and far-fetched Sanskrit derivation from one single root supported only by the theory of a grammarian, which may or may not have been put in practice in an unlettered age." The writer of the remarks I quote, would seem to imagine that language was the invention of grammarians; on the contrary, they are powerless to invent or even change a single word, and can merely codify the processes which are the result of unconscious action on the part of the unlettered masses. When Suján-puri is converted in popular speech into Sujáuli, it is not because in one rule Vararuchi has directed the elision of the initial *p*, and in another rule the elision of the final *n*; but because a Hindu's organs of speech (as the grammarian had noticed to be the invariable case) have a natural and unconscious tendency to the change.\* This tendency is still existing in full force, and my observing it to be so in another local compound first suggested to me the identification of *uri* with *puri*. Thus the beautiful lake at Gobardhan with the Mausoleum of the first of the Bharat-pur Rájás is called indifferently Kusum-sarovar, or Kusumokhar; and at Barsána is a tank, called either Bhánokhar or Brikh-bhán ká pokhar, after Rádha's reputed father Brikh-bhán. Both in Kusumokhar and Bhánokhar it is evident that the latter part of the compound was originally *pokhar*, and in the same way as the initial *p* has been there elided, so also has it been in Sujáuli and Maholi. The explanation of the last mentioned word 'Maholi' is one of the most obvious and at the same time one of the most interesting results of my theory. It is the name of the village some four miles from Mathurá, which has grown up in the vicinity of the sacred grove of Madhu-ban, where Ráma's brother Satrugna de-

\* Thus the A'gra shop-keepers who have converted Blunt-ganj into Belan-ganj, have probably never heard of Vararuchi, but they have certainly, though unconsciously, followed his rules.



stroyed the giant Madhu. On the site of the captured stronghold the hero is said to have built a city, called indiscriminately in Sanskrit literature Mathurá or Madhu-puri: the fact, no doubt, being that Mathurá was originally the name of the country, with Madhu-puri for its capital. In course of time the capital, like most Indian cities, gradually shifted its site, probably in order to follow the receding river; while Madhu-puri itself, fixed by the locality of the wood that formed its centre, became first a suburb and finally an entirely distinct village. Simultaneously with these changes, the name of the country at large was attached *par excellence* to its chief city, and Madhu-puri in its obscurity became a prey to phonetic decay and was corrupted into Maholi. The transition is a simple one; the *h* being substituted for *dh* by the rule II. 27 *Kha-gha-tha-dha-bhám Hah*, which gives us the Hindi *bahira* for the Sanskrit *badhira*, 'deaf' and *bahu* for *vadhu*, 'a female relation.'

It will be observed that Madhu-puri as a literary synonym for Mathurá remains unchanged, and is transformed into Maholi only as the name of an insignificant village. Thus an easy solution is found for the difficulty raised by the same critic I have before quoted, who objects "If it is possible in the lapse of time to elide the *p* of *puri*, why have not the oldest towns in India like Hastina-pur yielded to the change? and in the case of more modern towns why do we not find the change half-effected, some middle place in the transition stage?" To the former of these two questions I reply that a name when once petrified in literature is preserved from colloquial detrition. Thus, of two places originally named alike, one may retain the genuine Sanskrit form, while the other becomes Prákritized, according to their celebrity or otherwise. A parallel is afforded by the names of many English families: the elder branches retain the old spelling, however much at variance with modern pronunciation, as for instance, Berkeley and Marjoribanks; while the obscurer branches, who seldom had occasion to attach their signatures to any document, conform their spelling to the sound and appear in writing as Barkly and Marchbanks. Or not unfrequently they retain the old form, but pronounce the word not in the old-fashioned way but according to the value of the vowels in ordinary modern pronunciation. Thus Hastinapur exists unchanged, by virtue of its historical fame; had it been an obscure village it would probably have been corrupted into Hathaura. In fine, it may be accepted as a general rule that when the termination *pur*, *pura*, or *puri*, is found in full, the place is either comparatively modern, or if ancient is a place of pre-eminent note. The one exception to the rule is afforded by names in which the first element of the compound is a Persian or Arabic word. Some of them may be much older and yet not more distinguished than many of pure Hindu descent from which the *p* has disappeared; but the explanation lies in the natural



want of affinity between the two members of the compound, which would prevent them from coalescing, however long they might be bound together.

To say that the actual process of transition can never be detected is not strictly in accordance with facts. The elision is not restricted to proper names, but is applicable to all words alike; and in Hindi books written and printed at the present day it is optional with the writer to use exclusively either *kokila*, or *koil*; *súkar* or *súar*; *kúp* or *kúa*, or both indifferently. Again, to take a local illustration: Gobardhan, being a place of high repute, is always so spelt by well-informed people, but in vulgar writing it is contracted to Gordhan, and it is almost exceptional to come across a man whose name is Gobardhan Dás, who does not acquiesce in the corruption.

Next to *pur*, the local affix of most general signification and the one which we should therefore expect to find occupying the second place in popular use is *grāma*, *gāma*, or *gānw*. It occurs, however, far less frequently, at least in an unmutilated state. Thus of the 61 villages in the Kosi pargana there are only two with this affix, *viz.*, Dahi-gānw, named from the Dadhi-kund, and Pai-gānw from the Pai-ban-kund; *dadhi* and *payas* both meaning 'milk.' In the 111 Chhāta villages there are four, *viz.*, Bhaugānw Nand-gānw, Naugāma, and Uncha-gānw. In the 163 Mathurā villages there are six, *viz.*, Baehh-gānw, Dhan-gānw, Jakhin-gānw, Naugāma (properly Ná-gāma from its founder Nága), Nim-gānw, and Uncha-gānw. In the 141 Māt villages there is only one, Tenti ká gānw, and this a name given by Rájá Súraj Mall on account of the abundance of the *karil* plant with its fruit called *tenti* to a place formerly known as Akbar-pur. In the 203 Mahāban villages only two, *viz.*, Nim-gānw and Páni-gānw; and in the 129 Sa'dábád villages, four, *viz.*, Kukar-gama, Naugāma, Risgāma, and Tasigau. The proportion is therefore little more than two per cent, and even of this small number the majority may reasonably be presumed to be of modern date. Thus Nau-gāma in the Chhāta pargana was formed in later Muhammadan times by a moiety of the population of the parent village Tároli, who under imperial pressure abandoned their ancestral faith and submitted to the yoke of Islám. Again the five or six villages, such as Baehh-gānw, Dahi-gānw, &c., that have sprung up round the sacred groves and lakes and retain the name of the *tírath* unaltered, simply substituting *gānw* for the original *ban* or *kund*, are almost certainly due to the followers of Vallabháchārya at the beginning of the 16th century, or to the Gosáin who composed the modern Brahma-vaivarta Purána and first made these spots places of Vaishnava pilgrimage. It may therefore be inferred that in older names the termination *grāma* has, like *puri*, been so mutilated as to become difficult of recognition. The last name on the list, *viz.*, Tasigau, is valuable as suggest-



ing the character of the corruption, which it exhibits in a transitional stage. The final syllable, which is variably pronounced as *gau*, *go*, or *gon*, is unmistakeably a distinct word, and can only represent *gánw*. The former part of the compound, which at first sight appears not a little obscure, is illustrated by a village in the Mathurá pargana, Tasiha, a *patti*, or subdivision of the township of Sonkh, which is said to bear the name of one of the five sons of the Ját founder, the other four being Ajal, Asa, Púrna, and Sahjua. As these are clearly Hindi vocables, it may be presumed that Tasiha is so likewise, and we shall probably be right if we take it for the Prákrit form of the Sanskrit *tishya*, one of the lunar mansions, used in the sense of 'auspicious,' in the same way as the more common Púsa, which represents the asterism Pushya. Thus as the letter *g* can be elided under the same rule as the *p* in *puri*, the original termination *gráma* is not unfrequently reduced to the form *on*, in which not one letter of its older self remains. The most interesting example of this mutation is afforded by the village *Parson*. Its meaning has so thoroughly died out that a local legend has been in existence for some generations which explains it thus: that two days after Krishna had slain one of the monsters with which the country was infested, he was met at this spot by some of his adherents who asked him how long ago it was that he had done the deed, and he replied *parson*, 'the day before yesterday.' This is obviously as absurd as the *kal kátá*, or 'yesterday's cutting,' told about Calcutta; for apart from other reasons the word in vogue in Krishna's time would have been not *parson*, but its original form *parvas*. However, the true etymology, which is yet more disguised by the fact that office clerks always change the *r* into *l* and call the place Palson, does not appear to have been ever suggested till now. Clearly the name was once Parasuráma-gánw, or in its contracted form Parsa-gánw, and thence by regular transition has passed through Parsánw into Parson. If proof were required, it is supplied by the fact that a large pond of ancient sacred repute immediately adjoining the village is called Parasurám-kund.

The sacred ponds and groves with which the country of Braj abounds, are, as might naturally be expected, ordinarily much older than the villages on their margin; and, as illustrated by the above example, it is always of the utmost importance to the philologist to ascertain their popular names. These are much less liable to corruption than the name of any village; for as the *tíráth* is visited solely on account of the divinity with whom it is traditionally associated, his name is in it preserved intact, while as an element in the word that designates the village (a place most connected in the mind with secular matters) its primary import is less considered and in a few generations may be totally forgotten. Thus the obscure name of a pond, which can only be ascertained by a personal visit, often reveals the



name of the local deity or it may be of the founder of the settlement, and in that gives a surer clue to the process of corruption in the village name, than could ever be afforded by any amount of library research. For example, the resolution of such a word as Senwa into its constituent elements might seem a hopeless undertaking; but the clouds are dispelled on ascertaining that a neighbouring pond of reputed sanctity is known as Syám-kund. Thence it may reasonably be inferred that the original form was Syám-gánw; the final *m* of Syám and the initial *g* of gánw being elided by the rules already quoted, and the consonant *g* passing into its cognate vowel. Other names in the district, in which the affix *gánw* may be suspected to lurk in a similarly mutilated condition, are Jaiswa for Jay-sinh-gánw; Basáun for Bishan-gánw; Bhíun for Bhím-gánw; Bádon for Bádu-gánw (Bádu being for Sanskrit Báḍava); and Oháwa for Udha-gánw.

Another word of yet wider signification than either *puri* or *gráma*, and one which is known to have been extensively used as a local affix in early times is *sthána*, or its Hindi equivalent *thána*. And yet, strange to say, there is not a single village name in the whole district in which its presence is apparent. It probably exists, but if so, only in the very mutilated form of *ha*. Thus the village of Satohá on the road between Mathurá and Gorbardhan is famous for, and beyond any doubt whatever derives its name from, a sacred pond called Sántanu-kund. The eponymous hero is a mythological character of such remote antiquity, that he is barely remembered at all at the present day, and what is told about him on the spot is a strange jumble of the original legend. The word Satohá therefore is no new creation, and it can scarcely be expected to have escaped from the wear and tear of ages to which it has been exposed, without undergoing even very material changes. The local wise-acres find an etymology in *sattu*, 'bran,' which they assert to have been Sántana's only food during the time that he was practising penance. But this is obviously absurd, and Satohá, I am convinced, is an abbreviation for Sántanu-sthána. Instances are very frequent in which words of any length and especially proper names are abbreviated by striking out all but the first syllable and simply adding the vowel *ú* to the part retained. Thus in common village speech at the present day Kalyán is almost invariably addressed as Kalú, Bhagaván as Bhagú, Balavánt as Balú, and Múlchand as Mulú. In the last example the long vowel of the first syllable is also shortened and thus an exact parallel is afforded to the change from Sántanu to Satu or Sato. Sato-thána then by ordinary rule, if only the *th* in the compound is regarded as non-initial, becomes Sato-hána; and the further loss of the final *na* cannot be regarded as an insuperable difficulty.

An affix, which has itself suffered from organic decay has a tendency to involve its support in the same destruction, and thus I feel no difficulty



in proceeding a step further and interpreting the word 'Paithá' on the same principles as Satohá. It is the name of a large and apparently very ancient village with a temple of Chatur-bhuj, rebuilt on the foundations of an older shrine, which had been destroyed by Aurangzib. At the back of the god's throne is a hollow in the ground, which has given rise to a local etymology of the usual unscientific character. For it is said to be the mouth of the cave into which the people of Braj 'entered' (*paithá*) when Krishna upheld the Giri-ráj hill, which is about two miles distant from the village, in order to shelter them from the storms of Indra. Absurd as the legend is, it supplies a suggestion: for *paithná*, the verb 'to enter,' is unquestionably formed from the Sanskrit *pravishṭa*; and if we imagine a somewhat analogous process in the case of the local name, and allow for the constant detrition of many centuries, we may recognize in 'Paithá' the battered wreck of *Pratishthána*, which in Sanskrit is not an unusual name for a town.

*Sthali*, a word very similar in meaning to *sthána*, suffers precisely the same fate, when employed as an affix; all its intermediate letters being slurred over and only the first and last retained. Thus Kosi represents an original *Kusa-sthali*; and Társi with the sacred grove of Tál-ban, where according to the very ancient legend Krishna put to death the demon Dhenuk, is for *Tála-sthali*.

Another termination which we find occurring with sufficient frequency to warrant the presumption that it is an affix with a definite meaning of its own is *oi*. There are 5 examples of it in the district, *viz.*, Gindoi, Majhoi, Mandoi, Radoi, and Bahardoi. Of these the most suggestive is the first, Gindoi. Here is a pond of ancient sacred repute, called Gendokhar-kund, which is the scene of an annual melá, the Phúl Dol held in the month of Phálgun. Hence we may safely infer that Gindoi is a compound word with *Genda* for its first element. This is not an uncommon name for a Hindu, and its most obvious meaning would be 'a marygold.' So taken it would find a parallel in such proper names as *Guláb* 'a rose'; *Tulsi*, the sacred herb so called; *Phúl*, 'a flower'; and *Puhap*, for the Sanskrit *pushp*, with the same meaning. It may, however, be doubted whether it did not in the first instance represent rather the Hindi *gainḍa*, for *gajendra*, 'an elephant.' Besides preserving the name of the village founder, the term *Gendokhar-kund* is curious in another respect, as shewing a complete popular forgetfulness of the meaning of the termination *okhar* at the time when the word *kund* with precisely the same import was added. English topography supplies a case exactly in point; for *Wansbeckwater* is composed of three words, which all mean exactly the same thing, but were current in popular speech at different times, being respectively Danish, German, and English. But to return to Gindoi, which we have found to be a compound word with *Genda* for its first element; the termination *oi* yet remains to be considered.



I take it to be *vápi*, 'a pond.' By elision of the *p* and change of *v* into its cognate vowel, Genda-*vápi* becomes Gendau-ai, whence Gindoi; *o* being substituted for *au*, and *i* for *ai* by the following Sūtras of Vararuchi, *Auta* of I. 41. and *I'd dhairya* I. 39. The latter rule, it is true, refers strictly only to the word *dhairya*, which becomes *dhīram* in Prākṛit, but it seems not unreasonable to give it a wider application. The above line of argument would command unqualified assent, if it could be shewn that each of the places with the *oi* ending was in the neighbourhood of some considerable pond. There is such a one at Mandoi, called Achārya-kund; and Bahardoi, founded at an early period by Thākurs from Chitor, who only about 30 years ago lost their proprietary rights and now have all migrated elsewhere, is a place subject to yearly inundations, as it immediately adjoins some low ground where a large body of water is always collected in the rains. Radoi I have never had an opportunity of seeing, and therefore cannot say whether its physical characteristics confirm or are at variance with my theory: but at Majhoi, which is a Gújar village on the bank of the Jamuná, there is certainly no vestige of any large pond, which would account for the affix *vápi*. This one proved exception cannot, however, be regarded as a fatal objection; for the same effect may result from very different causes; as, for instance, the Hindi word *bār* in the sense of 'a day of the week' represents the Sanskrit *vāra*; while if taken to mean 'water,' or 'a child,' it stands in the one case for *vāri*, in the other for *bāla*. Thus in the particular word Majhoi, the *o* may belong to the first element of the compound and the *i* be the affix of possession.

*A'na* is another termination of somewhat rare occurrence. This is in all probability an abbreviation of the Sanskrit *ayana*, which means primarily 'a going,' 'a road,' but is also used in the wider sense of simply 'place.' An example very much to the purpose is supplied by Vararuchi, or rather by his commentator Bhāmaha, who incidentally mentions *munjāna*, 'a place producing the *munja* plant,' as the Prākṛit equivalent for the Sanskrit *maunjāyana*. The district contains nine places which exhibit this ending, viz., Dotāna, Halwāna, Hathāna, Mahrāna, Sihāna, Kaulāna, Mirtāna, Diwāna, and Barsāna. But what was only suspected in the case of the Gindoi group, viz., that all the names do not really belong to the same category, is here susceptible of positive proof. But to take first some of the words in which *ayana* seems an appropriate affix: Dotāna, derived on the spot from *dānton*, 'a tooth-brush,' which is suggestive of Buddhist legends and therefore of ancient sanctity, may well be for Devatāyana; Halwāna, where an annual melā is celebrated in honour of Balarāma, may have for its first element Hala-bhrit, a title of that hero, the final *t* being elided and the *bh* changed into *v*; while the first syllable in the three names Hathāna, Kaulāna, and Mirtāna, may represent respectively Hasti, Koma,



and Amrit; Amrit Singh being recorded by tradition as the founder of the last named village. But the resemblance of Diwāna and Barsāna to any of the above is purely accidental. The former commemorates the Jāt founder, one Diwān Singh, whose name has been localized simply by the addition of the affix *a*, while Barsāna has a history of its own, and that a curious one. It is now famous as the reputed birth-place of Rādhā, who is the only divinity that for the last two centuries at least has been popularly associated with the locality. But of old it was not so: the hill on which the modern series of temples has been erected in her honour, is of eccentric conformation, with four boldly-marked peaks; whence it is still regarded by the local Pandits as symbolical of the four-faced divinity, and styled *Brahma kā pahār*, or 'Brahma's hill.' This lingering tradition gives a clue to the etymology: the latter part of the word being *sānu*, which is identical in meaning with *pahār*, and the former part a corruption of Brahma. But this, the true origin of the word, had entirely dropped out of sight even in the 16th century, when the writer of the *Vraja-bhahti-vilāsa* was reduced to invent the form *Brisha-bhānu-pura* as the Sanskrit equivalent for the Hindi Barsāna. A somewhat similar fate has befallen the companion hill of Nand-gānw, which is now crowned with the temple of Nand Rāé Jī, Krishná's reputed foster-father. Its real name, before Vaishnava influence had become so strong in the land, was *Nandī-grāma*, by which title it was dedicated to Mahādeva in his character of Nandisvar, and the second person of the Hindu trinity, who has now appropriated all three of the sacred hills of Braj, was then in possession of only one, Gobardhan.

The local name Mai, or Mau, for the one seems to be only a broader pronunciation of the other (in the same way as *nāu* is the ordinary village pronunciation for *nái*, 'a barber,' the Sanskrit *napita*), is found occasionally in all parts of Upper India and appears also in the Mathurá district, though not with great frequency.\* Twice it stands by itself; twice as an affix, in Pipara-mai and Ris-mai; once in connection with a more modern name of the same place, Mai Mirzá-pur; and twice, as in Rāe-pur Mai and Bara Mai, where the exact relationship with the companion word may be a little doubtful. In most of these cases I consider it to be an abbreviation of the Sanskrit *mahi*, meaning 'land' or 'a landed estate.' The elision of the *h* is not according to any definite rule laid down by the Prākṛit grammarians, but certainly agrees with vulgar practice: for example, the word *mahina*, 'a month,' is always pronounced *maina*; and if it were given its full complement of three syllables, a rustic would probably not understand what was meant. At Mai Mirzápur the tradition is that the name commemorates one Mayá Rām; and in the particular case, this very possibly

\* Mr. Blochmann informs me that he has noted with regard to this word 'Mau,' that it is found all over the wide area extending from Western Málwá to Eastern Audh, but does not seem to occur in Bengál, Bihár, or Sindh.



may be so; but obviously instances of this very restricted derivation are rare.

*Nagar*, 'a town,' has always been fairly popular as a local affix, and the Mathurá district contains seven examples of the word so used, *viz.* Rúp-nagar, Sher-nagar, a second Rúp-nagar, Ma'súm-nagar, Rám-nagar, Bír-nagar, and Ráj-nagar. But it is in modern times and as a prefix that it enters most largely into any catalogue of village names. As a rule, whenever now-a-days an over-crowded town throws out a branch settlement, which becomes of sufficient importance to claim a separate entry in the Government rent-roll, it is therein recorded as Nagla so-and-so, according to the name of the principal man in it. On the spot, Nagla Bali, to take a particular case, is more commonly called Bali ká nagara; and after the lapse of a few generations, if the new colony prospers, it drops the Nagara altogether, and is known simply as Bali. The transmutation of the word *nagara* into Nagla and its conversion from a suffix into a prefix, are due solely to the proclivities of native revenue officials, who affect the Persian collocation of words rather than the Hindí, and always evince a prejudice against the letter *r*. It is interesting to observe that in England the Teutonic mode of compounding names differs from the Celtic, in the same way as in India the Hindí from the Urdú: for while the Celts spoke of Strath Clyde and Abertay, the Teutons preferred Clydesdale and Taymouth.

The number of sacred woods and lakes in Braj accounts for the terminations *ban* and *kund*, which probably are not often met elsewhere. Examples of the former are Kot-ban, Bhadra-ban, Brinda-ban, Loha-ban and Mahá-ban; and of the latter, Rádhá-kund and Mádhuri-kund. The only name in this list, about which any doubt can be felt as to the exact derivation, is Loha-ban. It is said to commemorate Krishna's victory over a demon called Loha-jangha, *i. e.* Iron-leg; and at the annual festival, offerings of 'iron' are made by the pilgrims. In the ordinary authorities for Krishna's life and adventures I certainly find no mention of any Loha-jangha, and as we shall see when we come to speak of the village Bandi, local customs are often based simply on an accidental coincidence of name, and prove nothing but the prevalent ignorance as to the true principles of philology. But in the *Vrihat-kathá*, written by Somadeva in the reign of Harsha Deva, king of Kashmir, A. D. 1059-1071, is a story of Loha-jangha, a Bráhmaṇ of Mathurá, who was miraculously conveyed to Lanka: whence it may be inferred that at all events in the 12th century Loha-jangha, after whom the young Bráhmaṇ was named by the romancer, was recognized as a local power; and thus, though we need not suppose that any such monster ever existed, Loha-ban does in all probability derive its name from him.



The few local affixes that yet remain require no lengthened notice : of *garh*, or *garhi* there are as many as twenty instances, *viz.* Nílkanthgarhi, a settlement of Jáesvár Thákurs ; Sher-garh, a fortress commanding the Jamuná, built in the reign of Sher Sháh ; Chamár-garhi, a colony of the factious Gújar tribe ; Ahvaran-garhi ; Chintá-garhi and Rustam-garhi, founded by Gahlot Thákurs in the reign of Aurangzeb ; Badan-garh, commemorating Thákur Badan Síñh, father of Súraj Mall, the first Bharatpur Rájá ; I'khú-Fath-garh, founded by one of Súraj Mall's officers ; Birju-garhi, Chintá-garhi, 'Ináyat-garh, Kankar-garhi, Lál-garhi, Máná-garhi, Mani-garhi, Rám-garhi, Shankar-garhi, Tilka-garhi, Bharú-garh, and Tál-garhi, all founded by Játs during the fifty years that elapsed between the establishment of their brief supremacy and the British annexation. The name will probably never be used again as a local affix ; and its extreme popularity during one half-century constitutes an interesting landmark in Indian provincial history, as proof of the troubled character of the country, when no isolated habitation was thought secure unless protected by a circuit of wall and ditch.

*Kherá*, as seen in Páli-kherá, Awa-kherá, Pál-khera, Aira-kherá, Sar-kand-kherá, and Sel-khera, invariably implies a state of comparative deprivation, which may be either of people or of land, according as it arises either from the emigration of the greater part of its inhabitants to some entirely different locality, or by the formation of a number of subordinate hamlets in the neighbourhood, which divide among themselves all the cultivated area and leave the old bazar merely as a central spot for common meeting.

*Patti* ordinarily implies a comparatively modern partition of family lands : thus the villages, into which the old township of Magora was divided by the four sons of the Tomar founder, are called after their names, Ajít-patti, Ghátam-patti, Jájan-patti, and Rám-patti : and similarly Bájana was divided by the Játs into three villages known as Dilu-patti, Siú-patti and Sulṭán-patti. The other four places in the district that have this affix do not, however, bear out the above rule. They are Lorha-patti, Nainu-patti, Patti Bahrám, and Patti Sakti. Neither of these has any companion hamlet dating from the same time as itself ; and Nainu-patti is a place of considerable antiquity, which long ago was split up into eleven distinct villages.

Another word of precisely similar import is *Thok*. This is used in the Mahá-ban pargana as an element in the name of five out of the six villages that constitute the Sonai circle, and which are called Thok Bindávani, Thok Gyán, Thok Kamal, Thok Saru, and Thok Sumerú.

*Khoh* is an exceptional affix, which occurs only once, in Mangal-khoh, the name of a village on a 'creek' of the old stream of the Jamuná.

Of *Sarác* as an affix we have examples in A'zamábád Sarác, Jamál-pur Sarác, Mal Sarác, Sarác-'Alí Khán, Sarác Dáúd, and Sarác Saliváhan. Only



at the two first is there any Saráe actually in existence ; both of these are large and substantial buildings erected by local Governors on the line of the old Imperial road between Ágrá and Láhor. The others were probably mere ranges of mud huts, like the ordinary saráe of the present day, and have therefore long since disappeared.

The Persian terminations *ábád* and *ganj*, which predominate so largely in some parts of India, have been little used in Hindí-speaking Mathurá. Of *ábád* there are only six examples, being an average of one to each pargana, viz., A'zam-ábád and Murshid-ábád, each commemorating a local Governor in the reign of Aurangzib ; Aurang-ábád, dating from the same period ; Sa'dábád, the chief town on the demesne of Sháh-jahán's minister Sa'dullah Khán ; and Ásaf-ábád, Bir-alí-ábád, Gulshan-ábád, and Salim-ábád, named after founders of less historical distinction.

Having thus passed in review every affix denoting 'place,' that we have been able to identify, we proceed to consider the second class of names, viz., those in which the affix signifies 'possession.' The examples under this head are equally numerous and in a philological point of view of no less importance ; but the whole series is traversed by a single clue, and if this is grasped at the beginning, it is found to lead so directly from one formation to another, that it precludes all necessity of pausing for lengthy consideration at any particular stage of the argument. Obviously, the simplest mode of expressing possession is by attaching to the name of the owner the grammatical particle, whatever it may be, which in consequence of its familiar use has been selected as the special sign of the genitive or possessive case. This in modern Hindustani is *ká* or *ki*, which we find employed in the following ten words, viz., Barká, Mahanki, Berká, Marháká, Bhartiyaká, Bhúreká, Káneká, Marhuaká, Saláká, and Súrká. In the last six names on the list the former part of the compound, viz., Bhartiya, Bhúrá, &c., is known to be the name of the Ját founder of the village. Thus we have an indisputable proof that about a century ago it was not at all an uncommon thing to form names of places in this way. If no earlier examples of the formation occur, it is most reasonable to explain their absence by inferring, as in the case of *puri*, that in the course of time the rough edges, that once marked the place where the word and its affix joined, have become so worn and smoothed down that they can no longer be felt. Now by eliding the *k*, a very simple proceeding and one quite in accordance with rule, an amalgamation would be effected between the two elements of the compound which would totally alter their original appearance ; and we have only to reinsert it to discover the meaning of many names otherwise unintelligible. Thus Bhálai, a settlement of Bhál Thákurs, is seen to represent *Bhál-ki* (*basti*) ; Bághai is for Bágh-ki ; Maḍanai, for Maḍan-ki ; Ughai, for Ugra-ki ; Mahpai, for Mahípa-ki ; and so on. Similarly, Indau is for Indra-ká, and Karnau for Karna-ká : the re-



presentation of *a + a* by *au* rather than *á* being almost an invariable practice, as we see in *ráu*, a contraction for *rāja*, *páuw* for *pada*, *nau* for *nava*, and *táu* for *táta*.

*Ká* however is not the only sign of the genitive case in use; for in the Marwári dialect its place is occupied by *rá*. Of this too there are abundant examples, as might have been anticipated; for some centuries ago, migrations from Rájpútáná into Mathurá were very frequent and in a less degree continue to the present day. Thus, we have Umraurá, Lohrári, Ganesará, Bhurári, Púthri (from *púth*, a sand-hill), Bhainsára, Garumrá (for Garuḍa-rá) and Bágharra, &c. At the last named place the old village site is called *Sher-ká-kheṛá*, which puts the meaning of the word Bágharra beyond a doubt; the reduplication of the *r* being purely phonetic. Other names of a slightly different character are Kunjera (where is Kunj-ban), Ráhera, Ránera (founded by Sissodia Thákurs, who named it after the Ráná of Chitor whence they had migrated), Maghera, Nonera, and Konkera, &c. In these the prolongation of the second syllable of each word makes it probable that the affix is not simply *rá*, but rather *hárá*. This word is known to be exactly identical in meaning with the more common *wálá*, of which, as a component in a village name, we have two illustrations in the district, *viz.* Pípalwárá and Bhadanwárá. It is therefore not in itself unlikely that *hárá* would be used for the same purpose; and the belief that it really has been so used, is confirmed by the fact that Ránahárá and Nonahárá are alternative modes of spelling Ránera and Nonera, and are perhaps the more popular of the two among village scribes. In rapid speaking it is difficult to distinguish between the sounds of *ahara* and *era*; as may be familiarly exemplified by the great Hindu festival, the Dāśahara, which by people who aim only at representing the vulgar pronunciation, is invariably spelt Dusserah. Thus such words as *kamera* 'a workman,' from *kám*, 'work,' and *chitera*, 'a painter' from *chitra* 'a painting'—being obviously exactly identical in sense with *kám-wálá* and *chitrawálá*—may be best explained by supposing that the original termination was *hárá*; and in the same way Nonera, meaning 'Salt-town' (from *lon* or *non*, the Hindi form of the Sanskrit *lavana*), if written in full, would be Lavanahárá, or Nona-hárá. These considerations are interesting, since they supply with almost absolute certainty the derivation of the particle *rá* as the sign of the genitive case. It is the second syllable of *hárá*, the first syllable of which is always combined with and lengthens the final vowel of the first member of the compound. The more common *ká*, with precisely the same signification, is of entirely different origin and represents the Sanskrit affix *aka*.

In the same way as *ká* has been unable to resist mutilation, so also with *rá*; though in the latter case it is not the consonant, but the vowel that has suffered. There consequently remains only the letter *r*, which we see



appearing as a final in such words as Kámar, Sahár, Udhar, and Surír. Of these, Kámar (for Kám-rá) is probably an offshoot from the neighbouring town of Kám-ban in Bharatpur territory, a famous place of Vaishnava pilgrimage; while Sahár and Udhar must have been named after their respective founders, who in the one case is known to have been called Udho, or Udhan, and in the other was probably some Sabhá. In Surír, which presents peculiar difficulties, we fortunately are not left to conjecture. For a local tradition attests that the town was once called Sugrív-ká Kherá. The resemblance between the two names is so slight that the people on the spot and the unphilological mind generally would not recognize any connection between them: but according to rules already quoted Sugrív-rá would pass naturally into Surír, and the fact that it has done so is a strong confirmation of the truth of the rules.

Both in Sanskrit and also in modern Hindustani, the affix most commonly used in the formation of adjectives that denote possession, is *í*; thus from *dhan* 'wealth' comes *dhani*, 'wealthy,' and from *mála* 'a floral wreath,' comes *máli*, 'a florist.' Dr. Hunter, with much perverted ingenuity, has gone out of his way to suggest that the latter are an aboriginal and non-Aryan race and "take their name from the tribal term for man, *male*, from which many hill and forest people of northern and central India, possibly also the whole Malay race of the Archipelago are called." I am not aware that in this theory he has found any followers: whatever the origin of the Malays, there is no more reason to suppose a connection between them and the Mális of our gardens, than between man, the biped, and *man*, a weight of 40 sers. As the letters of the alphabet are necessarily limited, it must occasionally happen that combinations are formed which are quite independent of one another and yet in appearance are identical. Among examples of the *í* affix we find in Mathurá, from *dhimar*, 'a fisherman,' Dhímari, a fishing village on the bank of the Jamuná; from a founder Husain, a village Husainí; from Pál, the favourite title of a Thakur clan, Páli; from Pingal, Pingari; from *semal*, the cotton-tree, Semri; from babúl, the acacia, Babúri; from *Khajúr*, Khajíni; and from Kinára, 'the river bank,' Kinári, &c. A lengthened form of the same affix is *iya*, which we find in Jagatiya and Khándiya.

Another affix, which in ordinary Sanskrit literature occurs as frequently as *í*, and with precisely the same signification, is *val*, *vatt*. In vulgar pronunciation the consonant *v* generally passes into the cognate vowel; thus Bhagavati becomes Bhagoti, and Sarasvati, Sarsúti. I am therefore led to suspect that this is the affix which has been used in the formation of such village names as Kharot, Khatauta, Ajinothi, Bilothi, Kaji-rothi, Basonti, Bāthi, Jamunauta, Junsuthi, Sonoṭh, Bādauṭh, Barauth, Dhanoti, and Jatarota. All these places are presumably old, and nothing can be stated with certainty as to the period of the foundation, but the



only one of them in any way remarkable is Báthi. Here is the sacred grove of Bahula-ban, with the image of the cow Bahulá, who (as told in the Itihás) addressed such piteous supplications to a tiger who was about to destroy her, that the savage beast could not but spare her life. A *melá* in her honour is still held on the fourth day of Kuwár, called 'Bahulá chaturthi.' In every other instance where the *ban* is a place of any celebrity, it has supplied the foundation for the village name, and has probably done so here too. Nor is the transition from Bahulá-ban to Báthi at all an isolated one; the change of the dental into the cerebral consonant need present no difficulty, for the same has occurred in the Hindi *paṭṭan* 'a town,' and in *mūṛha* 'a fool' for the Sanskrit *mugdha*; but the insertion of the aspirate is an irregularity which it is not equally easy to explain.

A third affix which can be more appropriately noticed here than elsewhere, though it has a somewhat different force, is *a*. This implies primarily 'a product' or 'result.' Thus from *ber*, the fruit tree, comes the name of the village Bera, an orchard of *ber* trees; from Nahar, a man's name meaning lion, Nahra; from Parsu, an abbreviation for Parasū-rám, Parsua; from Ráe [Sen], Raya; from Parameshvar Dás, Pavesara; and similarly Bisambhara, Dandisara, &c.

We may now pass on to the first sub-division of class III, in which are included all such village names as originally were identical, without addition or alteration of any kind with the names borne by the founders: though the original identity, it must be remembered, is no guarantee against subsequent corruption. One of the earliest examples in the district is afforded by the village Son, which is said to have been the capital of a Rájá Son—or more probably Sohan—Pál, a Tomar Thákur from Delhi. Sonkh, Sonsa, and Sonoth, all three places in the immediate neighbourhood, would also seem to be named after him and to prove that he was an historical personage of at least considerable local importance. Another interesting illustration which must also be of early date, is found in the name Dham Siṅha. Here Dham, which is the obsolete Prákrit form of *dharma* and is not understood at the present day, runs a great risk of being altered by people who aim at correctness but lack knowledge, into the more intelligible word *dhan*. In modern times this style of nomenclature has been so prevalent that a single Pargana—Mahá-ban—supplies us with the following examples, *viz.* Birbal, Gaju, Misri, Bhúra, Súraj, Báru, Rausanga, Nauranga, Mursepa, Bansa, Bhojua, Bhíma, and Súr. Of these, Rausanga for Rúp Sinha would scarcely have been recognizable but for the aid of local tradition. Occasionally, the names of two brothers, or other joint founders, are combined, as we see in Sampat-jogi, Chúra-hansi, Bindu-buláki, and Harnaul. The latter is a curious contraction for Harna Navala; and as 'the swing' is one of the popular institutions of Braj, the word not unfrequently passes through a further



corruption and is pronounced Hindol, which means a swing. This will probably before long give occasion to a legend and a local festival in honor of Rádhá and Krishna.

Under the same head comes the apparently Muhammadan name Noh; which, with the addition of the suffix *jhil*, is the designation of a decayed town on the left bank of the Jamuná to the north of the district. At no very great distance, but on the other side of the river, in Gurgánw, is a second Noh; and a third is in the Jalesar Pargana, which now forms part of the Ágrá district. So far as I have any certain knowledge, the name is not found in any other part of India; though it seems to occur in Central Asia, for the Yárkand expedition is stated in the papers to have reached Leh viá Khotan, Kiria, Polu, and Noh, by the easternmost pass over the Kuen-lun mountains. Upon this point I may hope to acquire more definite information hereafter; the best maps published up to the present time throw no light on the matter, for though they give the towns of Kiria and Khotan, they do not show Noh, and its existence therefore requires confirmation. The three places in this neighbourhood all agree in being evidently of great antiquity, and also in the fact that each is close to a large sheet of water. The lake, or morass, at Noh-jhil spreads in some years over an area measuring as much as six miles in length by one in breadth. It is no doubt to a great extent of artificial formation, having been excavated for the double purpose of supplying earth with which to build the fort, and also of rendering it inaccessible when built. The inundated appearance of the country combines with the name to suggest a reminiscence of the Biblical Deluge and the Patriarch Noah. But the proper spelling of his name, as Mr. Blochmann informs me, is Núh, with the vowel *ú* and the Arabic *h*. Badáoní, who twice\* mentions the town, spells it with the imperceptible *h*; but in the Áin-i-Akbarí, which herein agrees with invariable modern usage, the final letter is the Arabic *h*. Again, if a reference to the Deluge were intended, the word Noh would not have been used simply by itself; and standing as it does, it can scarcely be other than the name of the founder. But (again to quote Mr. Blochmann) "Muhammadans use the name Núh extremely rarely. Ádam, Músá, Yúsuf, and Ayúb are common; but on looking over my lists of saints, companions of Muhammad, and other worthies of Islám, I do not find a single person with the name Núh; and hence I would look upon a connection of Noh with Noah as very problematical. I would rather connect it with the Persian *núh*, 'nine,' which when lengthened becomes *noh*, not *núh*; as the Persian *dih*, 'a village,' becomes *deh*, not *dih*." But if we abandon the Semitic name, it will be better, considering the purely Hindu character of the country, to try and fall back upon some

\* Once as the scene of a fight between Iqbál Khán and Shams Khán of Bayánah (A. H. 802), and again as the place where Mubárak Sháh crossed the Jamuná for Jartoli.



Sanskrit root, and I am inclined to regard the name as a Muhammadan corruption of *nava*—not the adjective meaning ‘new,’ but a proper name—and with the *h* added either purposely to mark the distinction, or inadvertently in the same way as *rājā* is in Persian characters incorrectly written *rājah*. In the Harivansa (line 1677) mention is made of a king Ushinara, of the family of Kaksheyn, who had five wives, Nrigā, Krimī, Navā, Darva, and Drishadvati. They bore him each one son, and the boys were named Nriga, Krimi, Nava, Suvrata and Sivi, of whom Nava reigned over Navarāshtram; Krimi over Kumilā-puri; Sivi, who is said to be the author of one of the hymns of the Rig Veda (X. 179), over the Sivayas, and Nriga over the Yaudheyas. In the Mahābhārat the Usinaras are said to be a lower race of Kshatriyas. They are mentioned by Pānini in a connection which seems to imply that they were settled in or near the Panjāb; and in the Aitareya Brahmana, Usinara is collocated with Kuru and Panchāla. Again, Drishadvati, the fifth of Usinara’s wives, recalls to mind the unknown river of the same name which is mentioned by Manu as one of the boundaries of Brahmāvarta, and in the Mahābhārat as the southern boundary of Kurukshetra. From all this it may be inferred that the Navarāshtra, over which Usinara’s third son Nava reigned, cannot have been far distant from Mathurā and Gurgānw; and its capital may well have been the very place which still bears his name under the corrupt form of Noh or Nauh.

The second subdivision of Class III is of an extremely miscellaneous character and admits of no grouping, each name having a separate individuality of its own. Some of the more obvious examples have been already quoted: such as are Basai, ‘a colony,’ for the Sanskrit *vasati* (which at the present day is more commonly abbreviated by the alternative mode into *basti*); Chauki, an outpost, on the Gurgānw road; Nagariya, ‘a small hamlet’; Barhā ‘a removal’; Garhi, ‘a fort’; Mai, ‘an estate’; Khor, ‘an opening’ between the Barsāna hills; Anyor, ‘the other end’ of the Gobardhan range; Pura, ‘a town’; Kheriya, ‘a hill’; and Toli, ‘an allotment.’ Others require more detailed explanation on account either of their intrinsic difficulty, or of the mythological disguise put upon them by the local pandits, who think there is no place in the whole of Braj which does not contain some allusion to Krishna. Thus they connect the word Mathurā with the god’s title of Madhu-mathan, forgetting that the country certainly existed and, for all that is known to the contrary, bore the same name as now for ages prior to the incarnation in which that title was acquired. The more natural derivation is from the root *math* direct, in its primary sense of ‘churning’; an exact grammatical parallel being found in the word *bhidura*, ‘breakable,’ a derivative from the root *bhid*, ‘to break.’ The name thus interpreted is singularly appropriate; for Mathurā has always been celebrated for its wide extent of pasture-land and many herds of cattle, and in all poetical descriptions of the



local scenery 'the churn' is introduced as a prominent feature. I observe that Bábu Rájendralála Mitra in a learned article on the Yavanas, comprised in the earlier part of this volume, has incidentally remarked upon a passage in the Sánti Parva of the Mahábhárat, in which the word Madhura occurs, that this is the ancient form of Mathurá. Now I should hesitate to dispute any statement deliberately made by so eminent a scholar, but this appears to be a mere *obiter dictum*, and I strongly doubt whether in the whole range of early Sanskrit literature the capital of Braj is ever designated Madhurá. In the particular passage which he quotes, Lassen regards the word as the name of a river; and that the well-known city in the Dakhin is in the vernacular always spelt Madhurá in no way affects the argument; for even if the two names are etymologically identical, which is probable but not certain, the dislike shewn by all the languages of the south to the use of hard consonants is quite sufficient to account for the alteration.

Similarly, the name of the country, Braj, or Vraja, has nothing to do with the Vajra Sena, the son of Aniruddh, who is said to have been crowned king of Mathurá on Krishna's death; but comes immediately from the root *vraj*, 'to go', and is thus a highly appropriate designation for a land of nomadic herdsmen. Equally at fault is the mythological derivation of 'Bathen,' the name of two large villages in the Kosi Pargana, where Balaráma, it is said, sat down (*baithen*) to wait for Krishna. Here again the real reference is to the pastoral character of the country, *bathan* being an archaic term to denote a grazing-ground. A still greater and more unnecessary perversion of etymological principles is afforded by the treatment of the word Khaira. This is derived from the root *khedna*, 'to drive cattle', which was Krishna's special occupation as a boy: but it is in fact only the regular contraction of the Sanskrit *khadira*, the *Acacia Arabica*, more commonly known as the *babúl*; as is proved by the contiguity of the village to the *Khadira-ban*, one of the twelve sacred groves. A somewhat similar tree, as may be observed in passing, the *lodhra*, or *Symplocos*, has probably furnished a name for the village of Lohi in the Mát Pargana: while the Tinduk Ghát at Mathurá is probably so named not in honour of any pious ascetic, but with reference to the *pasendu*, or *Diospyros*, one of the most common trees in the district, which in Sanskrit is called Tinduka.

But the most interesting example of an elaborate myth based solely on the misunderstanding of a local name is to be found in the village of Bandi. Here is a very popular shrine, sacred to Bandi Anandi, who are said to have been two servants of Jasoda's, whose special employment it was to collect the sweepings of the cow-shed and make them up into fuel. But in the inscription over the gateway leading into the court-yard of the temple, which is dated *Sambat* 1575, there is no mention of Anandi whatever. Part is illegible, but the first words read clearly as follows: *Svasti*



352 F. S. Growse—*The Etymology of Local Names in N. India.* [No. 4, *sri Sarvoparī birājamān Bandi Jī. Tasya sevak, &c.* From this it may be inferred that Anandi has been added in very recent times simply for the sake of the alliterative jingle, and because there happened to be a second old figure on the spot that required some distinctive name. The original word was Bandi alone. The Gokul Gosains support their theory as to its etymology by making the Gobar Līlā at Bandi one of the regular scenes in the dramatic performances of the Ban-jātra; but it is not accepted by the more old-fashioned residents of the village, who maintain that the local divinity was a recognized power long before the days of Krishna, who was brought there to offer at her shrine the first hair that was cut from his head. Their view as to the relative antiquity of the Bandi and the Mathurā god is certainly correct; for both the images now believed to represent Jasoda's domestic servants are clearly effigies of the goddess Durgā. In the one she appears with eight arms, triumphing over the demon Mahishāsura; in the other which is a modern fac-simile, made at Brinda-ban, of the mutilated original, she has four arms, two pendent and two raised above the head. Neither of them can represent a human handmaid; and thus they at once disprove the modern story, which would seem to be based on nothing more substantial than the resemblance of the word *bandi* to the Persian *banda*, meaning 'a servant.' The real derivation would be from *bandya*, or *vandya*, the future participle of the verb *vand*, signifying 'venerable' or 'worshipful.' Thus what was once an epithet of a particular image of Devi became after a time its distinctive name; and eventually, being referred by the ignorance of the people to a more ordinary term of current speech, has originated a legend and a local festival for which in fact there is no foundation whatever.

The above is one illustration of a general rule that all presumably ancient local names are entirely different in origin and meaning from any terms of current speech with which they may happen to be identical in form. Thus, as we have already seen, the village Parson has no connection with *parson*, the common adverb of time; neither is Paitha so named, as being near the mouth of the cave into which the people of Braj 'entered' (*paithā*). Again, Rāl, a large village in the Mathurā Pargana, is not so called as being the scene of one of Krishna's 'battles' (*rār*), as local pandits say; nor because the extensive woods round about it abound in *rāl*, or 'resin;' but rather it is a contraction of Raja-Kula, 'a king's house;' a compound of similar character with Gokul, 'a cow house,' the name of the town where Krishna was nurtured by the herdsman Nanda. Rāval, a village in the same neighbourhood, the reputed home of Rādhā's maternal grandfather Surbhān, may be identical in meaning; or it may even represent an original Rādhā-kula, in which case it would be curious as affording the earliest authority for Rādhā's local existence and pre-eminent rank. Koila again is evidently not



the bird called in Sanskrit *Kokila* and in Hindi *Koil* ; for who would dream of calling a place simply Cuckoo without any affix such as in the possible compound Cuckoo-town ? Neither is it the exclamation *Koi lá*, uttered by Vasudeva as he was bearing the infant Krishna across the Jamuná ; for whatever the language then in vogue, it certainly was not modern Hindí : nor again, and for a similar reason, does the word *Koila* mean 'charcoal' with a reference to the ashes of the witch Pútaná, washed across the stream from the town of Gokul. But it may be taken for granted that the final consonant stands for *rá* and has the possessive force of that particle, while the former member of the compound is either *Koi*, 'the water-lily,' or *Kol*, for *Kroṇa*, 'a wild boar.' The extensive morass in the neighbourhood, well-known to sportsmen as the *Koila jhil*, renders either derivation probable and appropriate. If the fact were not now placed on record, a few more years and the philologists who look for the origin of Indian names in every language saving only the vernacular of the country, would seize the opportunity of declaring *Koila* to be merely a mis-pronunciation of the English 'quail.' Similarly, it may reasonably be conjectured that *Kukar-gama* is not so called because a Banjára in his travels happened to bury beside the village pond a favourite dog (*kukar*), though the slab supposed to cover the dog's grave is still shewn ; but rather, as the village is certainly of ancient date and was colonized by Thákurs from Chitor, it is more probable that its name commemorates the otherwise unknown founder, since *Kukura* occurs in the Mahábhárat as the proper name of a king, and may therefore have been at one time in common use. To pass yet more rapidly over a few other illustrations of the same rule, that apparent identity is equivalent to real difference : *Kámar* does not commemorate Krishna's gift of a blanket (*kamal*) to the shivering hermit Durvásas, but rather implies a migration from the older town of *Káma* ; 'Ainch' does not refer to the 'stretching' of Krishna's tent-ropes, though the real derivation is doubtful ; 'Jáu' is not the imperative verb 'go,' but a corruption of *yáva*, 'lac ;' *Marna*, now altered by office copyists to *Bharna*, has no relation to the 'death' of one of Krishna's enemies ; and 'Jait' is not simply an abbreviation for *jaitra*, but (as shewn by the village pronunciation *Jaint*) represents an original *Jayanta*, which occurs in Sanskrit as the name both of a river and a country.

It must, however, be borne in mind that the application of this rule is restricted exclusively to local names of ancient date. Thus the name of the village *Sanket* is really identical with the Sanskrit word *sanket*, meaning 'an assignation' or 'rendezvous ;' the place which lies halfway between Barsána and Nandgánw, the respective homes of Radhá and Krishna, having been so called by the Gosáins of the 16th century with the special object of localizing the legend. Similarly, *Pisaya* with its beautiful forest of kadamb trees, to which the author of the *Vraja-bhakti-vilása* gives



the Sanskrit title of Pipása-vana, may really bear a name identical with the Hindi word *pisaya*, 'thirsty' if the name was first assigned to the spot by the Gokul Gosáins as a foundation for a story of Rádhá's bringing a draught of water for the relief of her exhausted lover. But this is questionable, since it appears that there is a place with the same name, but without any similar legend, in the Alígarh district ; and both are therefore most probably far anterior to the 16th century and susceptible of some entirely different explanation.

In all these and similar cases it is impossible to arrive at sound conclusions without a large amount of local knowledge ; while the absurdity of the explanations advanced by the local Pandits demonstrates the equal necessity for acquaintance with at least the rudimentary laws of philological science. Scholastic speculations made without reference to physical features or the facts of village history are always liable to summary disproof ; and no one with any respect for his own reputation should think of pronouncing off-hand upon the derivation of the name of any place regarding the circumstances of which he has not very definite information. For example, as the village Jaṭi-pura is on the border of the Jáṭ state of Bharatpur, what could be more plausible than to say that it is so called as being a Jáṭ colony ? but as a fact, it has always been inhabited by Bráhmans, and its founder was the Vallabháchárya Gosain Bīṭṭhálnáth, who was popularly known by the name of Jaṭi jí. Again, Lodhauri (in accordance with the principles stated in the earlier part of this paper) might be at once set down as equivalent to Lodha-puri ; but here too the caste of the residents forbids such a derivation, for they have always been not Lodhas, but Jádons ; and the modern name is a perversion of Lalítá-puri. Phálen again and Siyára would be inexplicable but for the knowledge that they are built, the one on the margin of a pond, called Prahlád-kunḍ, and the other by the Chír Ghát, a very ancient and now comparatively neglected *tírath* on the Jamuná. The confusion between the letters *s* and *ch* is one of the peculiarities of the local dialect. Thus Amar Sīnh is frequently called Amarchu ; and the village of Parsua, in the mouths of the villagers on the spot, is indistinguishable from Pilehua.

Although it may safely be laid down as a general principle of Indian toponymy that the majority of names are capable of being traced up to Aryan roots, it is possible that the rule may have some exceptions. In the Mathurá and Mainpuri districts there is a current tradition that the older occupants of the country were a people called Kalárs. The name seems to support a theory advanced by Dr. Hunter in his Dissertation, where he quotes a statement from some number of the Asiatic Society's Journal to the effect that the whole of India was once called Kolaria. On the strength of a number of names which he sees in the modern map, he concludes that the race, from



whom that name was derived, once spread over every province from Burma to Malabar. He finds indications of their existence in the Kols of Central India; the Kolas of Katwár; the Kolís of Gujarát; the Kolitas of Asám; the Kalárs, a robber caste in the Tamil country; the Kolárs of Tinnevely, and the Kolís of Bombay, &c., &c. Upon most of these names, as I have no knowledge of the localities where they exist, I decline to offer any opinion whatever, and can only express my regret that Dr. Hunter has not exercised a little similar caution. For he proceeds to give a list of town-names, scattered as he says over the whole length and breadth of India, which seems to me of the very slightest value as a confirmation of his theory. No one should be better conversant than himself with the vagaries of phonetic spelling; and yet he gravely adduces as proof of the existence of a Kol race, such names as Kulianpur and Kullian; though it is scarcely possible but that, if correctly spelt, they would appear as Kalyánpur and Kalyán; the latter being still a popular Hindi name and the Sanskrit for 'auspicious'. Moreover, if the race was ever so widely spread as he supposes, it is inconceivable that they should give their tribal name to the different towns they inhabited; for such names under the supposed circumstances would have no distinctive force. For example, if the Hindus were suddenly to be swept out of India, the race that superseded them would not find a single village bearing such a name as Hindu-pur, or Hindu-gánw. Obviously it is only a country that derives its name from a tribe, while towns and villages commemorate families and individuals. To ascertain who the Kalárs were is certainly an interesting question, but one upon which it is as yet premature to speak positively. My own impression is that the name denotes a religious rather than an ethnological difference and that they were—in this neighbourhood at all events—Buddhists or Jains. At many of the places from which they are said to have been ejected by the ancestors of the present Jáṭ or Thákur families, I have found fragments of Buddhist or Jain sculpture, which can only have been the work of the older inhabitants, since it is certain that the race now in possession have never changed their religion. It is of course possible that these Kalárs may have been non-Aryan Buddhists; but the old village names, which in several cases remain unchanged to the present day, such as Aira, Madem, Byonhin, &c., though of doubtful derivation, have certainly anything but a foreign or un-Indian sound.

These and a considerable number of other names yet require elucidation: but the words with which I prefaced Part II of my Mathurá Memoir in anticipation of the present argument, have now I trust been so far substantiated that I may conclude by repeating them as a summary of actual results. "The study of a list of village names suggests two remarks of some little importance in the history of language. *First*, so many names that at a hasty glance appear utterly unmeaning can be positively traced back to



original Sanskrit forms as to raise a presumption that the remainder, though more effectually disguised, will ultimately be found capable of similar treatment: a strong argument being thus afforded against those scholars who maintain that the modern vernacular is impregnated with a very large non-Aryan element. *Secondly*, the course of phonetic decay in all its stages is so strictly in accord with the rules laid down by the Prákrit Grammarians, as to demonstrate that the Prákrit of the dramas (to which the rules particularly apply), even though extinct at the time when the dramas were written for the delectation of a learned audience, had once been the popular language of the country; and as Anglo-Saxon imperceptibly developed into modern English, so has Prákrit been transmuted into modern Hindi, more by the gradual loss of its inflections than by the violent operation of any external influences." Thus the recognition of Persian or any dialect of Persian as the vernacular of the country implies an historical untruth as regards the past and can only be verified in the future by the obliteration of all existing traditions.

*Transcript of the Pála Inscription of the Buddal Pillar, Dínájpúr, by PANDIT HARACHANDRA CHAKRAVARTI. Communicated by E. V. WESTMACOTT, C. S.—With an annotated translation by PRATÁPACHANDRA GHOSHA, B. A., Assistant Secretary, Asiatic Society, Bengal.*

In the 1st volume of the 'Asiatic Researches,' a translation is given of this inscription by Wilkins, but without the text. A short time ago, Mr. E. V. Westmacott, C. S. obtained a transcript from Pandit Harachandra Chakravarti which is given below with a fresh translation.

Mr. Westmacott says that Buddal was a factory in the Company's commercial days; it is on the Kulkuli-khari, about ten miles E. N. E. from Patnitala Police Station. The pillar is less than a mile N. E. of it, near Mangalbári, and goes by the name of 'Bhím's ox goad' (*Bhímer Pánti*).

1. ज्ञातः शण्डिल्यवंशैको वीरदेवस्तदन्वये ।  
पाञ्चालो नाम तद्भावे गगंस्तस्मादजायत ॥
2. शक्रः पुरोदिशिपति न दिगन्तरेषु  
तत्रापि दैत्यपतिभिर्जितनन्दनः सः ।  
— — — — — धर्मपरायणः स  
तत्क्षामुपैति निजहास इहस्पतिं यः ॥
3. पत्नीच्छा नाम तस्यासीदिच्छयान्निर्विवर्त्तिनी ।  
निसर्गविमलस्त्रिधा साध्वी प्रेममयी शुभा ॥



4. विद्यासु यूपमुख - - - - -  
- - - - - परितस्त्रिलोकं ।  
सुनुस्तयोः कमलयेनिरिव द्विजेशः  
श्रीदर्भपाणिरितिनामनि सुप्रसिद्धः ॥
5. आरेवाजनकान्ततद्भजमदस्त्रिम्यच्छिला संदत-  
रागैरी पितुरीश्वरेन्दुकिरणैः पुण्यत् सितिमो गिरेः ।  
मार्तण्डास्तमयोदधारणजलादावारिराशिद्वयात्  
नीत्या यस्य भुवं चकार करदा श्रीदेवपालो नृपः ॥
6. माद्यन्नागजेन्द्रसवदनवरतोष्मासिदानप्रवाहैः  
क्षिप्रकोद्धतभद्रप्रवणघनरजः सम्भृताशा विकासं ।  
दिक्चक्रायातभूभृत्परिकरविसरद्वाहिनी दुर्विलोक  
प्राप्य श्रीदेवपालो नृपतिरवसतापेक्षया द्वारि यस्य ॥
7. दत्ताप्यनल्पमुदुपच्छविपीठमये  
यस्यासनं नरपतिः सुरराजकल्पः ।  
नानानरेन्द्रमुकुटाङ्कितपादपांशुः  
सिंहासनं सचकितः स्वयमाससाद ॥
8. तस्य श्रीशर्करादेव्या मन्त्रे सोम इव द्विजः ।  
अभूत् सोमेश्वरः श्रीमान् परमेश्वरवत्तमः ॥
9. न धानं विकटं धनञ्जयतुलामारुह्य विक्रामता  
वित्तान्यर्थिषु वर्षता कृतिगिरो नोद्भवंमाकर्णिताः ।  
नैवाक्तं मधुरं वचः प्रणयिनः सम्भृतिनास्त्रिश्रिया  
येनैव स्वर्गुर्जगद्विसदृशैश्चक्रे सतां विस्मयः ॥
10. शिव इव करं शिवाया हरिरिव लक्ष्म्या गृह्णात्रमप्रेप्तुः ।  
अनुरूपाया विधिलत् तरलादेव्याः पाणिं जग्राह ॥
11. - - - - -  
दुर्बोधोऽभ्यलशक्तिः स्वनयपरिगता श्रेयविद्याप्रतिष्ठः ।  
ताभ्यां जन्म प्रपदे विदशजनमनो नन्दनः सुक्रियाभिः  
श्रीमान् कैदारमित्यो गृह इव विलसद्भीतरूपप्रभावः ॥
12. भास्वदर्शनसम्पीत चतुर्विद्यापयोनिधीन् ।  
जहासागस्त्यसम्पत्तिमुद्गिरत्रस्थिरानु यः ॥
13. उत्कीलितोत्कलकुलं हृतजनगर्वं  
खर्वाहितद्रविङ्गुर्जरराजदर्पं ।  
भूपीठमभिरसनाभरणं वुभोज-  
गौडेश्वरश्चिरमुपास्य धियं यदीयां ॥
14. स्वयमपहृतवित्तानर्थिनो योवसेने  
द्विपदि सुहृदिवासेन्निर्विवेको यदात्मा ।  
भवजलधिनिपाते यस्य भीर्भूतपापा



- परिहृदित कंशं यौ यः परे धाम्नि रमे ॥
15. यस्याग्रेषु दृढस्थितिप्रतिष्ठतेः श्रीस्वरपालो नृपः  
साक्षादिन्द्र इव प्रजा प्रियवलो गत्व भूयः स्वयं ।  
नानाभोनिधिमेखलस्य जगतः कल्याणगङ्गा चिरं  
गङ्गाभःभुतमानसो नतशिरा जपाच्च पूत पयः ॥
16. देवग्रामभवा तस्य पत्नीबन्धा — — — — — ॥  
— — — — — ॥
17. सा देवकीव तस्माद्यशोदया स्वीकृतमिव कृष्णं ।  
गोपालप्रियकारकमस्तुत पुरुषोत्तमं तनयम् ॥
18. जमदग्निकुलोत्पन्नः सम्पन्नचचचिन्तकः ।  
यः श्रीगुरवमिश्राष्ट्रो रामसेन इवापरः ॥
19. कुशलो गुणान् विवेक्तुं विजितेषु यं नृपः प्रपदं स्थनमति ।  
श्रीनारायणपालः प्रशस्तिरपरा कियत्यस्यैव ॥
20. नानाकाव्यरसागमेष्वधिगमो नोतौ परा निष्ठता  
वेदोक्तानुगमादसौ प्रियतमो वदस्य सम्प्रश्रितां ।  
आसक्तिर्गुणकीर्तनेषु महतां विख्यातविज्योतिषो  
यस्यानल्पमतेरमेययशसो धर्मावतारो नदः ॥
21. यस्याश्रयः शासति वागधीश विहाय वैराणि निसर्गजानि ।  
उभे स्थित सख्यमिवाभिगन्तवावेकच लक्ष्मीश्च सरस्वती च ॥
22. शास्त्रानुशीलनगभीरफलैर्विवादे  
विद्वत्सभासु परवादि मदानुलेपः ।  
उद्भासितः सपरितो रिपुविद्विषाच्च  
नसोकविक्रमवरेण हताभिमानः ॥
24. सहसैव वलं न यस्य यस्त्वाधगत्यपि न कर्त्तुं यन्न किञ्चित् । — — — — —  
कलिदानमपि यस्य न जातु शान्तं । — — — — —
25. अतिलोल पलित कलिद्युग वाक्मोकि यमपि शूरशर वर्मेति — — — — —
26. बाणी प्रसन्नगम्भीरा विरोतिव पुनातिव ।  
पितरं स्वयमास्थाय पुत्रद्रुपगमत् स्वयं ।  
ब्रह्मति पुरुषात् यस्य — — — यं च प्रपेदिर । गोदा — — — — —
27. स्वकीय वपुषो लोके चण पाहिणि स्वादि — — — — —
28. — — — फलिनां दृष्टः प्रियसख जार्थोपमरोपिन ।

#### TRANSLATION.

I. There was one of S'ardilya race known as Viradeva, from him descended one by name Pārchāla, in his family and of him was born Garga.

From the Sanskrit it appears that Garga was the son of Pārchāla, and that Viradeva was one of the ancestors of Garga. The latter might have been the father of Pārchāla, but there is no doubt whatever as to Garga being the son of Pārchāla, as the Sanskrit has "of him was born" तस्मादजायत. Wilkins has left out the word "ख्यात" "known."



II. (This prince, like) S'akra, lord of the eastern quarter, but not of other quarters, though defeated by Daitya chiefs.....gained (mastery over) the world by his devoted piety and derided Vṛhaspati.

S'akra is another name of Indra, the lord of the firmament. He is also worshipped as one of the Dikpálas or lords of the ten quarters. He rules over the eastern quarter; the text has it, "पुरोदिशिपति," but Wilkins has omitted it; he says, "Sakra was ruler but of one quarter." तच्चापि literally means "notwithstanding." It has been rendered "though." The text has "जितनन्दनः स," which means "defeated the son he." I have rendered the "son" by "Prince." Wilkins appears to have ignored the last portion of the 2nd line. There is a blank in the text, and it affects the sense a great deal; but, as it is, it means that Indra, though lord of the eastern quarter only, became lord of the whole world, because he had Vṛhaspati for his adviser. Hence, this prince like him, though lord of one small portion of the country, became by his piety, lord of the world and that too without the aid of Vṛhaspati's advice, whom he could well afford to deride.

III. His wife was named Ichchhá, who could move his heart at her will: she was by nature pure and gentle, faithful, loving, and auspicious.

Wilkins adds, "Ichchha like *love*" meaning perhaps "like Rati the goddess of love." This does not occur in the text. Again, the text does not say "she was admired," it has "(she was) naturally pure, स्निग्धा = gentle, साध्वी = faithful, प्रमदयती = loving, full of love. शुभा = auspicious; according to Hindu astrology certain signs and marks make a person auspicious." Mr. Wilkins has "and her beauty was like the light of the moon". The two lines of the text have nowhere any term to indicate the moon, unless Wilkins has been misled by स्निग्धा = cool.

IV. In sciences he was (as high as) the pinnacle of a triumphal column .....the triple world lay before him.

Their (Garga and Ichchhá's) son was like the lotus-born chief of the twice-born and was well-known by the name of S'ridarbhapáni.

Wilkins has — "in his countenance, which was like the flower of the waters, were to be traced the lines of the four sciences. The three worlds were held in subjection by his hereditary high rank." The equivalents word for word are विश्वासु in the sciences; स्तूप is a triumphal column or any column, स्तूपकुख = the face or the pinnacle of the top of the स्तूप; परित = all round lay; त्रिलोक = three worlds. Of these two, namely Garga and Ichchhá, was born the son named S'ri-Darbha-Páni, (Lotus-born is Brahmá. Dviya is a bráhmaṇ) who was like Brahmá the chief of Bráhmans. Wilkins has, "he took unto himself the name of:" but the text has इति नामनि सुप्रसिद्धः was renowned by the name of S'ri Darbha Páni. The text has तयो the Genitive Dual of तत् = He, that; hence स्तुतयो = son of the two and not of "these two was descended," which is inaccurate.

V. From the source of the Revá where heaps of stone saturated with the mada (juice exuding from the head of) lustful elephants to (the foot of the) father of Gauri (Mount Himalaya), whose whitened hills are nourished by the rays of the moon (on the forehead) of I's'vara. From the waters of the setting sun to those of the rising Aruṇa, between the two vast waters



(lay) the world, which by his (S'ri Darbha Páni's) policy Prince Sri Deva Pála rendered tributary.

The text after mentioning "from the source of the Revá" parenthetically describes the place, and similarly, after mentioning the Himálaya, describes its peaks. Wilkins confounds the two parenthetical sentences and applies them both to the Himálaya. The glory and greatness of the minister S'ri Darbha Páni is enhanced by stating that Prince Sri Deva Pála being advised by him made the vast country described above tributary to himself. From this and the following stanzas it will appear that the descendants of S'andilya family were always ministers of the Pála rājās and their greatness was dependent upon the greatness of the princes they served. It is noteworthy that the text has the setting and the rising oceans instead of the usual rising and setting hills. Another transcript has the following reading for the last part of line I of this stanza—बराबल्लाब्धिपारेधूते.

VI. At whose (S'ri Darbha Páni's) gate stood waiting prince S'ri Deva Pála, having received the dazzling moving army of the multitude of assembled chieftains from surrounding quarters where the prospect was filled with (bending?) advancing waves of thick dust arising from the earth and moistened by the exudation of liquor gushing from the mouths of various lustful big elephants.

Wilkins has not noticed, it appears, the participle verb प्राप्य = "having received"; and hence the confusion of meaning and sense. His rendering, however, gives a much better sense; but it must be noted that the ideas belong to him rather than to the text. दुर्विलोक = is not hidden, but difficult to be gazed at, i. e. dazzling bright. भङ्ग = waves, प्रवण = bending, घन = thick, रज = dust, भृत् = filled with, आश्रयिकाश = (आश्रय = quarters of the globe) + (विकाश = expansion) = prospect.

It is said that a kind of venous liquid flows from the head of lustful (mast) elephants. This sweet liquor attracts lots of bees who are seen to buzz round the heads of such elephants. दान = The liquor exuding from the head of elephants. दिक्चक्र = the circle of the quarters or points of the compass, circus of all sides. विसदत् = moving.

VII. At whose throne in earlier days he used to pay down no small sum of pithas, bright as the moon, the ruler of mankind, the image of the lord of the gods, and the dust of whose feet was marked with the diadems of sundry chiefs of people, gloriously possessed himself of his own throne.

पिठ = a small silver coin. उडुप = moon (उडु = star प = lord), and hence the pithas were as bright as the moon, and not "as the lunar rays," as Wilkins has it. Lord of men who was like the image of Indra, and whose feet, &c.,.... in earlier days having given pithas to whose throne assumed his own. The phrase यस्यासनं appears to be a mistake for यस्यासने.

VIII. To him was born of the princess S'arkarā the fortunate Some-s'vara, twice-born like Soma, the son of Atri and favourite of the supreme God.

IX. Who was neither elated nor tyrannous for having attained a power equal to that of Arjuna, who would not listen with a vain-glorious



feeling to the laudatory addresses of the poor, because of having lavished riches on them, nor utter sweet words but cherished his friends by his prosperity: who by his virtues unparalleled in the world became an object of admiration with good men.

X. Desirous of attaining the estate of a family-man he accepted, agreeably to the law, the hand of the princess Taralá, who was after his own image, as Siva did the hand of Sívá and Hari that of Lakshmi.

गृहस्थ is the second state of one's life. It comes after Brahmachari. It is the estate of a family-man.

XI. Of this pair was born the fortunate Kedáranátha Misra, resplendent as Guha, renowned for beauty and personal valour, gifted with the power of learning the most abstruse sciences, and possessed of a reputation for infinite knowledge, acquired by his own good sense, and capable of gladdening the wants of celestial beings by his good actions.

Guha = Kumára or Kártikeya.

XII. Who having drunk the ocean of the four sciences with the bright eyes of knowledge, brought them forth again and laughed at the unsteady reputation of Agastya.

The story is that the sage Agastya once drank up the ocean, taking the water in the palm of his hand, but found it difficult to bring it up again. This prince was far superior to Agastya in this respect. He drank up the ocean of knowledge with his eyes and by giving instruction to others brought it forth much more easily than the sage.

XIII. Trusting to whose wisdom the lord of Gauda for a long time enjoyed the surface of the sea-girt earth by eradicating the race of the Utkalas, conquering the haughtiness of the Huns, and humbling the pride of the kings of Gujjra and Dráviḍa.

XIV. Who considered them most needy from whom he had acquired wealth, whose mind never made any distinction between friend and foe, who was afraid of falling into the ocean of the world (of mortal birth) and was purged of all sins and who delighted in (contemplating) the world to come.

Wilkins' rendering of this passage is peculiar. In the first phrase अपहृतवित्तानर्थिने, he makes the following alteration before his meaning can be grammatically correct—वित्तानर्थिने. But taking अपहृतवित्तान् as an adjective to जनान् understood, the sense appears to be clear. That is, he considered them only अर्थिनः, i. e. needy, deserving his charity, from whom he had acquired wealth, i. e. he was charitable to the defeated princes and to his subjects, from whom he had acquired wealth by way of tribute or toll.

XV. Prince S'ri S'ura Pála, the Indra, whose strength lay in the love of his subjects, and who was identified with the welfare of his ocean-



girt world, constantly repaired to him, the image of Vrhaspati, and received, with his head bowed and mind purified, the pure water as that of Gangá.

Receiving water means 'was anointed king.'

XVI. His spouse was Vandhvá, born in Devagrám.

XVII. She like Devaki bore unto him a son, the best among mankind, who resembled Krishna, the adopted son of Yasodá, who was beloved of milk-women.

Wilkins has "husband of Lakshmi." This does not occur in the text.

XVIII. Who was named Sri Gurava Misra, like another heroic Rama, though born of the family of Jamadagni, and was thoroughly anxious (for the welfare) of the Kshatriyas.

Wilkins divides the phrase "सम्पन्नचक्र" into "सम्पत् नचक्र," and hence his rendering "was acquainted with all the constellations." The above reading is more probable as Parasu-Ráma was known to have been the deadliest enemy of the Kshatriyas, and this Misra, though as heroic as Parasu-Ráma, was not so inimical to the Kshatriyas, but on the contrary was friendly to them.

XIX. Who was skilled in discriminating the properties of things and at whose feet bowed down the Prince Sri Náráyana Pála after his victories. What other testimony is required of such a man?

XX. He appreciated the beauties of several poems and was much devoted to politics. He was greatly beloved by the people of Bengal for observance of the Vedas. He was fond of extolling the virtues of greatness. He was a renowned astronomer, and his vast understanding and boundless fame were born of Dharma.

XXI. It was by his blessings and the blessings of the lord of speech (Vrhaspati) that both Lakshmi and Sarasvati, forsaking their natural enmity, lived together in amity.

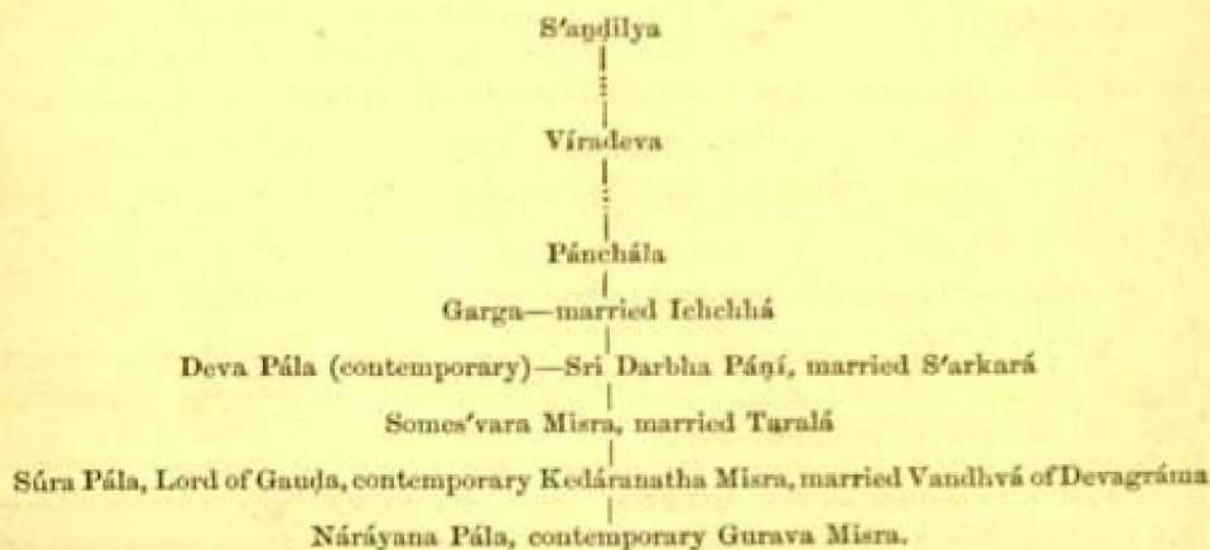
Lakshmi and Sarasvati are said to be two sisters. They were both married to Vishnu. Lakshmi is the goddess of prosperity, and Sarasvati that of learning. The Sastras say these two are incompatible in the same individual, the learned pundits being generally poor.

XXII. It was by the sound knowledge which he derived from constant study of the sástras that in the assemblies of the learned he foiled the pride of his opponents in discussion. He likewise on all sides drove away the enemies.

XXIII—XXVIII. The transcript here is very imperfect having many lacunæ. The passages which are legible are laudatory of the Donor Prince.



The following is the genealogical tree derived from the text. The Misras were evidently the hereditary ministers of the Pála Rájás of Bengal.



*On a copper-plate Inscription of the time of Skanda Gupta.—By*  
 RA'JENDRALÁLA MITRA.

(With a plate.)

I am indebted to General Cunningham for a facsimile and a very carefully-made hand-copy of a copper-plate inscription, lately discovered by him at Indor, a kherá ten miles from Anupshahar on the Ganges. The plate measures seven inches and nine-tenths by five inches and eight-tenths, the edges being slightly arched. The inscription extends to twelve lines, the last three of which are more apart from each other than the others. The character of the writing is the well-known Gupta, and is in a fair state of preservation, except at the beginning of the second, third, fourth, and fifth lines and in three or four places in the middle, where rust has eaten up the surface, and made the facsimile in those parts illegible to me; but, I think, even there the outlines of the letters are not altogether lost on the copper-plate, for in General Cunningham's hand-copy, which has helped me very largely in reading the record, they have been so produced as to be easily recognisable. Only in one place, where the age of the moon is given, I have failed to read the letters.

The document opens with a stanza in praise of the sun-god, and then records the mandate of a petty zamíndár, named Devavishnu, rendering it obligatory on the part of the guild of oil-sellers at Indrapur in the Doáb, to supply the temple of the sun, at that place, with a sufficient quantity of oil daily for the use of the temple, the supply being increased by two *palas*



which will be equal to 1120 grains, or about  $2\frac{1}{3}$  ounces, on every new moon day.

The donor was a Bráhmaṇa versed in the four Vedas, and owner of an estate in the Doab of the Ganges and the Yamuná, which is indicated by its ancient name of Antarvedi. The locale of the township of Indrapura is, doubtless, the modern village of Indor, and the kherá probably contains the ruins of the old temple of the sun.

The date is by far the most important part of this record. It states in clear and unmistakable words "the year one hundred and forty-six of the thriving and invincible kingdom of Skanda Gupta," or, in other words, a Gupta era calculated in connexion with a thriving kingdom, and not from a reign. The compound word *abhivardhamána-vijaya-rájya-samvatsare* cannot consistently be interpreted in any other way. Grammatically the phrase *rájyasamvatsare* can only mean "in the year of the kingdom," and to apply it to the reign it should be split into two separate words *rájye* and *samvatsare*, but the facsimile in this part is perfectly clear, and there is no trace in it of the vowel *e*, the mark of the locative, at the end of the first word. I called the attention of General Cunningham to this part of the record, and he assured me in reply that he could find no mark on the plate to indicate the vowel in question; a rubbing of this part of the plate which he has sent me appears perfectly distinct and without any vowel-mark on the top of the word *rájya*. Without the case-mark, the phrase, if applied to the reign on the strength of the epithet *abhivardhamána*, "flourishing," being in the present tense, it would make the reign of the prince extend to a hundred and forty-six years, and I have no hesitation, therefore, in rejecting such an interpretation as absurd. The word *rájya* in this part of the inscription has the letter  $\Upsilon$  so engraved as to make it thereby appear like *rárájya*, but this is an obvious misformation of the compound consonant *jya*, due to the writer, or the engraver, of the record, and cannot be taken as in any way intended to alter the sense. The mark for *e* is in the record a hook on the top, and not a curved line behind as in modern Bengali, and one of the  $\Upsilon$ 's cannot therefore be taken for a vowel-mark. It is possible, however, that a small mark, like that for *e*, may be omitted by mistake, and mistakes of the kind not being unknown in copper-plate inscriptions, it is necessary to enquire whether such a mistake has here been committed or not.

Assuming that there is no mistake in the part under notice, and seeing that the record does not give the name of the era in any technical term, but clearly describes the year to be of Skanda Gupta's kingdom, we cannot avoid the inference that the era intended is that of the sovereign named, calculated from the first year of his reign, and as distinct from those of Vikramáditya and Śakáditya. Further, that if we accept this to be the Gupta-kála of Abú Raihán, it does not begin either from the commencement of the reign of the



Gupta dynasty, or from its extinction, but from the reign of the seventh prince of that line. This would leave the first six princes out of the pale of the era, and the dates given in their inscriptions must, therefore, belong to the Samvat, the S'aka, or some other era current at their times.

Such a conclusion, however startling, would not be at first sight improbable. The record is inscribed by order of a private person, and he had perfect right in choosing the era in which he should date his grant, and as a Gupta era is known to have been current in India at one time, we may assume this to be the same. Skanda Gupta was a more renowned sovereign than S'ri Gupta, or Gupta, the founder of his house, and there is nothing improbable in his founding an era, or in the idea of that era being in currency for a hundred and forty-six years from the date of his accession to the throne of his ancestors, or of its being known as the Gupta-kála. The fact of its having got currency after the fall of six of the Gupta sovereigns would also in a loose way justify the statement of the Arabian traveller that it commenced after the fall of the Guptas.

The assumption on the strength of which all these inferences may be drawn cannot, however, be maintained. The manner in which the name of Skanda Gupta is introduced is quite inconsistent with such an idea. In all ancient and mediæval Indian inscriptions where kings are especially named to indicate their eras, the personal names appear simply, or with a single regal title, barely enough to point out their identity, and that at the end; whereas in the monument under notice we have it put prominently at the beginning with a large number of titles, and qualified with epithets in the present tense, such as would be appropriate for a reigning potentate, and exactly in the same way in which the names of kings occur in the two records of Hastin, noticed in the thirtieth volume of this Journal (pp. 6 and 10) and in the monuments of Eran.\* I am therefore strongly disposed to believe that the name in the inscription now under examination has been used with the same object which was prevalent in the minds of the writers in the other records, *i. e.*, to indicate the reigning sovereign and as a mark of loyalty, and not to define the era. It would follow as a matter of course that the word *rájya* in the record should be *rájye*, *i. e.*, it is not in its crude form as forming a part of a compound term, but in the locative case.

This assumption of mine would be in perfect keeping with the Kuháon pillar inscription in which Skanda Gupta is described as reigning in the month of Jyeshtha following the year 141 of an unnamed era, probably the same which in the records of king Hastin is described as included in the reign of the Guptas,† and which occurs without any specification in

\* Ante VI., and XXX. p. 14.

† Ante XXX., pp. 6-10.



the Eran monuments of Budha Gupta,\* and in the Udayagiri and Sanchi records of Chandra Gupta.† The argument on which I base my inference is very much the same which Mr. Fitz-Edward Hall once used in support of a similar conclusion with reference to Skanda Gupta as noticed in the Kuhāon pillar. Adverting to Prinsep's translation of that monument he said: "There is then nothing here recorded concerning the death of Skanda Gupta, as Prinsep supposes. Being neither the first ruler of the Gupta dynasty, nor the last, nor of special note, it would be extraordinary indeed if time had been computed from his decease. Moreover, if he and his kingdom had so long passed away, it seems preposterous that they should be mentioned, and in so eulogistic a strain, especially as there is not, on this hypothesis, even a subordinate allusion to the reigning monarch. Indubitably Skanda was on the throne when this memorial was written. The term शान्त, which is applied to his government, has, with other meanings, those of 'serene,' 'tranquil,' 'unperturbed,' 'flourishing.' In bearing these significations in addition to that of 'discontinued' or 'extinguished,' it may be compared with निर्वाण. Whatever be the era here followed, it appears to have been too well understood at the time to call for explicit specification."‡ Two years subsequently in another essay on the subject the writer had, however, occasion to recant this opinion, and to adopt a new one, which he thus developed:

"Now, the use, in close juxtaposition to the mention of the Gupta kingdom, of so equivocal a term as शान्त, in one inscription, and of भुक्ति, in another, the later of Hastin's, was enough, as soon as observed, to arrest attention. The former word, to be sure, bears the import of 'quiescent,' 'serene,' 'tranquil,' 'unperturbed,' 'flourishing,' no less than of 'discontinued,' 'extinguished,' but the latter, if unqualified by a temporal particle, denotes possession, or fruition, only as a thing of the past. Ordinary meanings which it has—all of them metaphorical of 'eating'—are 'used,' 'worn,' 'consumed,' 'disbursed,' 'expended.' In the older of Hastin's grants the phrase is भुक्ति which, like भोग, may signify, 'tenure,' 'incumbency;' other customary senses of it being, at the same time, 'dissipation,' 'waste,' 'destruction.' In order to substantiate the counter-position to that which I take touching the acceptation of शान्त, भुक्ति and भुक्त as chronologically bearing, in the phraseology of inscriptions, on the state of an empire, it must be made out that, in other writings of the same nature, these words imply duration to the period particularized.

"The partiality of the Hindus to euphemism is notorious; and it is therefore not surprising that where, as in the Kabaun inscription, reference

\* Ibid, p. 18.

† Ante V., p. X.

‡ Journal, American Oriental Society, VI., p. 530.



is made to an era determined by the annihilation of a series of powerful princes that diction which is least dyslogistic should be studiously selected. Congruously with such avoidance of an invidious term as has been indicated, it is likewise not at all singular that a direct encomium should be bestowed on a potentate who, however truculently he may once have lorded it, having been dust and ashes nearly a century and a half, could be favourably commemorated without antagonism to the impulses of family pride and without hazard of irritating popular prejudice. Pending the emergence, as established historical entities, of dynastic successors to Skanda, it will, then, be perfectly safe to look upon him as the last of the Guptas. Even should it transpire that he was survived by descendants who were not entirely disendowed of power, yet in him, so far as we are informed, the lustre of his lineage underwent definitive and irremediable eclipse. On collation of the wording of Hastin's grants with that of the Kahaun pillar, we thus discover no trifling corroboration of the statement derived from the Arabian traveller: and his language, in passing, will endure no alternative construction."\*

The immediate cause of this change of opinion was the discovery of a passage in Abū Raihān al-Birūnī's work which, as quoted in Thomas' Prinsep's *Indian Antiquities*, runs thus:

و اما کوبت کال فکان کما قیل قوما شرارا اقویا فلما انقرضوا ارخ بهم وکان  
بلب کان اخیرهم فان اول قاریهم ایضا متاخر عن شکال ۱۴۱

Reinaud has thus rendered it into French: "Quant au Gupta-kāla (ère des Gouptas), on entend, par le mot Goupta, des gens qui, dit-on, étaient méchants et puissants; et l'ère qui porte leur nom est l'époque de leur extermination."† Had the text of which this passage is a rendering been unquestionably correct, the necessity for a reconsideration of the case would have certainly arisen; but M. Reinaud was particular in affixing to his translation this remark: "Déjà je me suis excusé sur l'imperfection de ce qui est dit ici, et j'ai averti que les résultats que je présente offraient quelque incertitude, vu les nombres qui excèdent celui de cent." In 1854, several years before Mr. Hall penned his first essay, General Cunningham had also shown that the original Arabic text was obscure, and that the words فلما انقرضوا ارخ بهم would be better and more correctly rendered by "and then became extinct along with their epoch" than by "et l'ère qui porte leur nom est l'époque de leur extermination,"‡ and the attempt to make the inscriptions confirm the authority of the Arabian

\* Ante XXX., p. 3.

† *Fragments Arabes et Persans inédits relatifs à l'Inde*, pp. 138-143. Apud Thomas' *Prinsep's Antiquities*, I, p. 269.

‡ *Bhilsa Topes*, p. 139.



traveller was therefore thrown away. I have lately had the Arabic passage examined by Mr. Blochmann, than whom few can speak more authoritatively on the subject, and he has favoured me with the following note on the subject, and this I think may be accepted as quite decisive on the subject as to the weight to be attached to the remark of Abú Raihán in the form in which we now have it. He says,

"The whole passage is as corrupt as can be, and the word about which you are most doubtful contains in Cunningham's lines a misprint. The misprint is *ارج*, which should be *ارخ urrikha*; in the first line we have to read *شوارا* for *الشوارا*. Besides, Cunningham has 'Ballabh-Kál,' instead of 'Ballabh kána,' 'Ballabh was.' The passage thus far corrected is—

فاما كوت كال فكان كما قيل قوما شوارا اقويا فلما انقرضوا آرخ بهم و كان بلب كان  
 اخيرهم اول تاريخهم ايضا مآخر عن شكال ۲۴۱

but still, the Arabic and the sentence itself are bad. Abú Raihán cannot thus have written it.

#### *Translation.*

"As regards the Guptakál, they were, as is related, a people wicked and powerful; and when they were cut off, it was dated in them (the era commenced?), and apparently Ballab was the last of them (or after them). The beginning of their era likewise comes after the Shakakál 241.

"As it is, I can see no fault in Reinaud's translation. I wonder what Dr. Sachau of Vienna has found in the MSS. which he has just now been collating."

To argue upon such a passage and to torture other documents to conform to it is by no means commendable. Had it been otherwise, still the argument that a love of euphemism, or a desire to avoid "the hazard of popular prejudice" had led to the use of *s'ánta* and *bhukta* in the inscriptions would appear futile at best. Instead of its not being "singular," it would be in the last degree singular "that a direct encomium should be bestowed on a potentate" who, "however truculently he may have once lorded it, had become dust and ashes for nearly a century and a half." As "to impulses of family pride" the family being extinct for so long a time, there was none to be guided by such impulses, and it would no doubt be a most extraordinary phenomenon in political history, if popular prejudice could be irritated by calling a king, however great or popular he might have been when living, dead a hundred and forty-one years after the extermination of his dynasty. To use Mr. Hall's language, "the idea would be preposterous."

The Arabic authority, however, apart, I am clearly of opinion that the translations hitherto published of the first stanza of the Kuháon pillar



inscription is wrong, and no argument therefore can be based on those erroneous renderings. Prinsep's pandit misled him by putting in the Nágari transcript a visarga after *s'ánte*, whereby it was converted into the genitive singular of the noun *s'ánti*, 'peace' or 'extinction,' and it was accordingly interpreted as qualifying the noun Skanda Gupta, which was also in the genitive case. The visarga, however, does not occur in the facsimile published by Prinsep, and therefore it should be at once rejected. Had it existed in the original, it should still have been rejected, for *s'ánti* is itself a noun, and cannot possibly be used as an adjective for another noun. Mr. Hall was the first to notice this mistake, and he correctly pointed out that the word as used in the text was in "the seventh case of a past participle."\* The late Dr. Bhau Dáji did the same a few years after, the former rendering it by "being quiescent," the latter "peaceful."† Both were, however, mistaken in accepting the word as qualifying the term *rájye*, as also in the meanings they assigned to it. Mr. Hall subsequently rejected his first version, and accepted the word to mean "being extinct," but he still insisted on applying it to *rájye*, and the result therefore continued as unsatisfactory as before. The word stands just before *varshe*, and by the ordinary rule of Sanskrit construction it should be interpreted along with that which is proximate to it, and not taken over to *rájye*, which is removed from it by the intervention of several other words in a different case. Doubtless the exigencies of metre often lead to the reversion of the natural order or connexion of words in a sentence, but where both a distant and a near connexion are possible, the most appropriate course is to adopt that which is most natural, unless the context shows this to be inadmissible. This is the course which Sanskrit exegesis usually follow, and I see no reason to depart from it in explaining the stanza under notice. In it the words *s'ánte*, *varshe*, *trins'addas'aikottara-s'atatame*, *jaishthyamási* and *prapanne* stand in regular succession, and I have no hesitation in taking them to be intimately connected in sense. The meaning they together yield is "the year one hundred and forty-one having been over, and the month of Jaishthya having arrived," or "on the close of the year one hundred and forty-one, the month of Jaishthya having arrived," and this instead of being opposed to the context offers a much more natural and consistent sense than the version given by Mr. Hall.

To Europeans it might appear strange that the passed year should be named in the record, and not the current one to which the month specified belonged. But there is no inconsistency in this. In Bengal the usual practice to this day is to write in horoscopes the past year, and not the current one: thus were a child to be born at this moment (ten

\* Journal, American Oriental Society, VI., p. 530.

† Journal, Bombay As. Soc., VIII., p. 241.



minutes past eleven A. M. of the 3rd of February, 1875, assuming that the Christian era is used and the day begins with sunrise at 6 A. M.), his date would be given in these figures: 1874, 1, 2, 5, 9, 59, *i. e.* born on the lapse of fifty-nine seconds, nine minutes, five hours, two days, one month, and one thousand eight hundred and seventy-four years of the Christian era. Logically, this is the most precise way of putting the figures, and to leave no room for doubt, the figures are usually preceded by the words *s'aka nripateratitābdādayah*, "the S'aka king's past year, &c." That this principle has been adopted in the inscription is evident from the use of the two participles *s'ānte* and *prapanne* together. The word *rājye* in the inscription is in the locative case, showing the locale of the occurrence, whereas *s'ānte* and *prapanne* are in the locative case-absolute according to the rule of Pāṇini which says "that which through its own verb governs another takes the locative case." For determining the tense of such cases-absolute, the great logician Gadādhara lays down the following rule in his *Deṭiyādivyutpatti-vāda*: "The relation of a verb in the seventh declension with another implies the same or some other time: Thereof the present participle affix (*krit*) implies the same time [*i. e.* the action of the two verbs takes place simultaneously]. Where the participle affix is of the past tense, the time of the second verb is subsequent to that of the first; thus: on your going to the earth to conquer it, he attacked this city, &c. In the case of future participles the time of the first verb succeeds that of the other."\* Applying this rule to the two participles of the stanza under notice, we have *s'ānte* preceding *prapanne*, and the "extinction" or close of the "year" (*varshe*) must take place before the "arrival" (*prapanne*) "of the month of Jaishṭhya." If we take *s'ānte* to refer to *rājye* the meaning would be "the kingdom having become extinct and the month of Jaishṭhya arriving," leaving the *varshe* grammatically unconnected with the rest, or serving as a locative, which is absurd.

As the verse in question has proved a stumbling-block to many, and is of great importance in connexion with the history of the Guptas, I shall here reproduce Mr. Hall's reading and translation modified according to the above remarks.

यस्योपस्थानभूमिर्दृष्टिस्तद्विश्रितः पातवातावधूता  
गुप्तानां वंशजस्य प्रविष्टतयशसस्तस्य सर्वोक्तमर्थे ।  
राज्ये शक्रोपमस्य चित्तिपशतपतेः स्कन्दगुप्तस्य शान्ते  
वर्षे त्रिंशद्दशैकोत्तरकशततमे ज्येष्ठमासि प्रपन्ने ॥

\* सप्तम्याश्च समानकालीनत्वादिकं क्रियान्तरसम्बन्धः त एव वर्तमानार्थकतत्प्रत्ययस्यत्वं समानकालीनत्वं सम्बन्धतया । अतीतार्थकतत्प्रत्ययसमभिव्याहारस्थले उत्तरकालीनत्वं यथा त्वयि भौमं गते जेतुमरौक्षीत् सपुरीमिभामित्यादौ । भविष्यदर्थकतत्प्रत्ययसमभिव्याहारस्थले च पूर्वकालीनत्वं यथा दोग्धव्यासु गत इत्यादौ इत्यादिकं स्वयमूहनीयं ॥



"In the empire of Skanda Gupta,—the floor of whose audience chamber is swept by gusts from the bowing of heads of kings by hundreds; who is sprung from the line of the Guptas; of wide extended fame; opulent beyond all *others*; comparable with Śakra; lord of hundreds of monarchs;—the year one hundred and forty-one having passed away, and the month of Jaishṭhya arriving," &c.

It might be said that as the words *bhukti* and *bhukta* in the two inscriptions of King Hastin\* are connected with the word *rājya*, the same should be inferred in the case of the Kuḥāon record. But the circumstances under which the words occur are not the same, nor even similar. In the Kuḥāon monument the *s'ānte* stands as a participle distinct by itself, whereas in the Hastin records *bhukti* and *bhukta* are members of compound terms of which *rājya* forms only a subordinate member; and as participle adjectives they further qualify the word *samvatsara* the counterpart of the Kuḥāon *varsha* and not *rājya*, and therefore they rather support my inference than oppose it. *Gupta-nripa-rājya-bhuktau* and *Gupta-nripa-rājya-bhukte* simply mean "during the dominancy of the Gupta kings;" for according to the usually received interpretation *bhoga*, when referring to years, implies its currency. Hastin evidently was a vassal of the Guptas and he satisfied himself with the title of Mahārājā, whereas the Guptas always claimed to be Mahārājādhirāja, and therefore there is no inconsistency in his avowing the supremacy. Mr. Fergusson may take exception to this, as in his scheme of Indian chronology he accepts the title Mahārājā to be synonymous with emperor, and those who bore it to have been independent sovereigns; but with scores of Mahārājās who bow to the supremacy of our gracious sovereign Queen Victoria, and many of whom are not better than mere zamīndārs, none who is familiar with the history of India and of the ultra regal titles of the innumerable potentates who owned allegiance to the Pāndus, will be disposed to follow his lead.

Accepting the above arguments as correct, it is impossible to avoid the conclusion that Skanda Gupta was a reigning sovereign when the Kuḥāon monument was put up, *i. e.*, in the month of Jaishṭhya following the year 141, or the second month of 142; and as he could not under any human probability extend his reign to one hundred and forty-six years, the conclusion becomes inevitable that the year of his reign refers to some, at the time, well-known era which needed no special specification. To say that the eras of the Kuḥāon and the Indor monuments are different, and that consequently the one hundred and forty-one years of the former was calculated from a

\* Ante XXX, pp. 6 and 10. General Cunningham informs me that he has another inscription of king Hastin, and one of his son, in which the word *bhukti* occurs under identically the same circumstances, but I have not yet seen them.



different starting point to that of the latter, would be a mere assertion quite unsupported by proof, and opposed to every legitimate argument.

According to Abú Raihán the *Gupta-kāla* reckons from the year 241 of the S'aka era = A. C. 319, and if this could be accepted as correct, and we could assume that the era of the inscription under notice was the Gupta-kāla, its date would be A. C. 465; but as Abú Raihán's statement as preserved for us is hopelessly corrupt, and there is not a scintilla of proof to show that the Guptas used the so-called Gupta era, this assumption cannot be taken for granted. I am not disposed to reject altogether the statement of Abú Raihán, for however corrupt the passage, the fact of the Gupta and the Ballabhi eras being the same may be correct. Seeing that the Gupta era was current only over a small area in the Western Presidency, and that during the supremacy of the Ballabhi kings, the idea strikes me that the Ballabhi kings, having expelled the Guptas from Gujarāt, started an era to commemorate the event, just as S'akāditya had done two hundred and forty-one years before them after expelling the S'akas from northern India, and the era was optionally called Ballabhi or Gupta. And as Abú Raihán gathered his information in Western India, he was right in saying that the era dated from the extinction of the Guptas, meaning their expulsion from Gujarāt, without implying their total annihilation. This theory affords a very plausible solution of the question; but I must leave it aside for further research; the more so as two such distinguished Indian archæologists as General Cunningham and Mr. Thomas are engaged in discussion on the subject, and it is quite unnecessary for me to join issue with either of the disputants. I need here only observe that my own conviction is that the era of the Chandra Gupta inscriptions of Sānchī, of the Skanda Gupta inscriptions of Jūnāgarh, Kubbān, and Indor, of the Budha Gupta inscription of Eran, and of the Hastin inscriptions, are all dated in the S'aka era which being current and well known, needed no special specification, and is accordingly indicated by the word *Samvatsara*, which means "a year" and not an era, as it has been erroneously supposed by some. The aptote noun *samvat* also originally meant a year, but it has been so uniformly used in connexion with the era of Vikramāditya, that the secondary meaning must now be accepted as the right one. When the abbreviation  $\ddot{\text{v}}$  occurs in an inscription, it may mean the *samvat* or *Samvatsara*, and therefore it would be unsafe to take it for *samvat* for certain. There are many unquestionable instances in which it has been used for other than the *Samvat*. Under this conviction I accept the record under notice to be sixteen hundred and fifty years old, or, in other words, to date from 224 of the Christian era, and that Skanda Gupta was then a reigning sovereign, whose sway extended from Gujarāt to Anupshahar on the Ganges.



### Transcript.

- १ सिद्धम् । यं विप्रा विधिवत्प्रवृद्धमनसो ध्यानैकताना सुवः यस्यान्तं विदशासुरा न विविदुर्ब्रह्मं(ध्वं) न तिर्य-
- २ गतिः । यं लोको बहुरोगवेगनिवशः संश्रित्य चेतो लभः पायाद्दः सजगन्विद्या(धा)न-पुटभिद्रग्मा-
- ३ करो भास्करः ॥ परमभट्टारक-महाराजाधिराज-श्रीस्कन्दगुप्तस्याभिवर्द्धमान-विजय-राज्यसंश्रयत्सरशते षट् चत्वा-
- ४ (रिं)शतुत्तरतमे फाल्गुनमासे \*\*\*\*परिगृहीतस्य विषयपतिशब्दनामस्थानार्थेद्याभो-गाभिष्टब्धये वर्त्त-
- ५ माने वतापुरकपद्मा चातुर्वैद्यसम्मान्यवाङ्मणदेवविष्णुर्देवपुत्रो पारिन्दानपौत्रः उडिक-प्रपौत्रः सतताग्निहो-
- ६ ब्रह्मन्दे गोरान्यण्डयो वर्षगणसंगोच इन्द्रापुरकवल्लेभ्यां चवियाचलवर्म-भट्टकुण्डसिद्धा-भ्यामधिष्ठा-
- ७ नस्य प्राञ्चं(त्वां) दिशीन्द्रपुराधिष्ठानमडास्थानलक्ष्मणेव प्रतिष्ठापितकभगवते सवित्रे दीपोपयोऽन्यमाढ्यशो-
- ८ भिष्टब्धये पुण्यं प्रयच्छति । इन्द्रपुरनिवासिन्यालैलिकश्रेण्या जीवन्तप्रवराया इतोधि-ष्ठानादपक्रम-
- ९ ण-सम्प्रवेशयथा स्थिरायाः सुजखिकं प्रहपतेर्द्विजपुण्य दत्तमनया तु श्रेण्या यद्-भग्नयोगः-
- १० प्रत्यमाचे व्यच्छिन्नसंस्थं देयं तैलस्य तुल्येन पलद्वयं तु चन्द्रार्कसमकालीयं
- ११ यो व्यक्रमेदायमिमं निबद्धम् गोघ्नो गुरुघ्नो द्विजघातकः सः । तैः पातकैः
- १२ पञ्चभिरन्वितोऽधो गग(ग)च्छेन्नरः सोप(य)तिपातकैश्चेति ॥

### Translation.

Amen ! May he, whom Brāhmanas, in obedience to law, bepraise with the harmony of meditation and the entire devotion of their minds ;—may he, whose end and whose motions upwards and sideways neither the gods nor Asuras can divine ;—may he, whom men overpowered by disease and despondency seek with the utmost earnestness,—may that fountain and Creator of light (Bhāskara) who pierces the darksome envelope of the earth, be to your protection !

In the year one hundred and forty-six, in the month of Phālguna the—(?) of the thriving and invincible kingdom of his most noble majesty, the supreme sovereign of great kings, the auspicious Skanda Gupta, for the promotion of prosperity in the possession of the owner Sarvanāga in Antarvedi, (or the Doab of the Ganges and Yamunā) \* \* \* \* \* versed in the four Vedas, the highly respected Brāhmaṇa Devavishṇu, son of Deva, grandson of Pārindāna, and great grandson of Dodika, constant in the adoration of Fire, of the family (anvaya) of Gorā and the clan (gotra) of Varshagana, within the precincts of Indrapura, provides for the promotion



of the fame of his mother, the wherewithall for the maintenance of a lamp for the (image of the) lord Savitá (the sun), which is established to the east of the hermitage of the two Kshatriya saints Achalavarma and Bhumikantha and adjoining Indrapura and Mardasyána. It should be the duty of the guild of oilmen inhabiting Indrapura to maintain this grant, and, by supplying the oil to the Bráhmans of the temple, to make the merit of this gift reflect on them.

On every new moon they should give two palas of oil in addition to the daily allowance, and this (should be done) as long as the sun and the moon shall last. He will be a vile murderer of cattle, of spiritual instructors, and of Bráhmans, who will venture to set aside this ordinance; enveloped by the five heinous sins and all minor sins such a wretch will drop to the nether regions. Finished.

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# INDEX

TO

JOURNAL, ASIATIC SOCIETY OF BENGAL, FOR 1874,

PART I.

**Ā**BAD, in local names, 345  
 'Abdul Hamid's Mosque, 62  
 'Abdullah the Wahhābī, put to death, 68  
 'Abdullah-bin Mohammed, Imām of 'Omān, 132  
 'Abdullahpur, Hindu army defeated at, 83  
 'Abdul Latif, great grandson of 'Abdullah the Wahhābī, 68  
 'Abdul-Mālik-bin Hamid, Imām of 'Omān, 125  
 'Abdul-Mu'in, Sharif of Makkah, 70  
 'Abd-urrahmān, grandson of 'Abdullah, 68  
 Aboriginal tribes, 106, 240*n*.  
 āb-rawān, a fine muslin of Sunārgaon, 95  
 Abū Raihān al-Birūnī, on the Gupta kings, 367  
 Adnān, 185  
 Ahmed, governor of 'Omān, 132  
 el-Ahsā, in 'Omān, 194  
 Alexander the Great, 269  
 Alta Dighī, in Ekdālah, 244  
 Aminpūr, ruins at, 91  
 'Amru-bin Fahm, 112  
*ana*, in local names, 341  
 Andhras, a tribe, 106  
 Anupshahr, 363  
 Arabs, classification of, 185  
 Arabian genealogies, 185  
 Architecture, in A'sām, 311  
 A'sām, architecture, 311; introduction of Hinduism, 313; native histories of, 313; the country of the Bārah Bhūyas, 199; ruins at Dimāpur in, 1  
 Asām Burānji, on the conquest of Kamrup, 281  
 Asoka edicts, 269  
 Astronomical works, Greek, 274  
*auli*, *aula*, in local names, 333  
*aura*, in local names, 333  
 Ava, 7

A'zādpūr, another name for Ekdālah, 245  
 'A'zam Shāh (Ghiyās-uddin) of Bengal, 86; tomb of, 88  
 Azdites, the tribe, 184  
 Azki, in 'Oman, 190  
 'Azzān-bin Hizabr, Imam of 'Omān, 132  
 'Azzān-bin Temim, Imām of 'Omān, 129

**B**ADGER, translation of the Annals of 'Omān, 111  
 Badr Aulā, tomb of, 88  
 Baghawī, a commentary of the Qoran, 74  
 Bahādur Shāh, of Bengal, 291; coin of, 289  
 Bahla, Fort of, in 'Oman, 148  
 Bahrain, 188  
 Baid Bazar, site of old Fort of Sunārgaon at, 93  
 Balban, emperor of Dihli, in Sunārgaon, 83, 104, 287*n*.; descendants of, in Bengal, 287, 292  
 Balbi's account of Pegu, 11  
 Ballal Sen, ancestor of Lakshman Sen, 82  
 Ballal Sens, two, of Bengal, 83  
 Bandi, in Mathurā, 351  
 Bārah Bhūyas of Eastern Bengal, 197, 281  
 Barbak Shāh, inscriptions and coins of, 280, 282, 295  
 bases (Inflexional) of nouns, 48  
 Battah, in 'Omān, 165  
 Bāyazid Ghāzī, tomb of, 201  
 Bayley, E. C., Hon'ble, on Col. Hyde's Sassanian Coins, 99  
 Bedū and Hadhr, 193  
 Bender Mombasah, 165  
 Bengal, Geography and History of, 280; 'independence of, acknowledged at Dihli, 86; governors, 287  
 Benū Ghāfir, of 'Omān, 195  
 Benū-Rūāheb, clan of, 116, 187



Bhairab Bazar, confluence of the Meghna and the Brahmaputra, 94  
Bhowal, Fazl Ghazi of, 199  
Bhûya, derivation and meaning of the term, 198  
Bikrampur, capital of Ballal Sen, 82  
Binya Dala, of Martaban, 10  
Bishambhar Rai, 203  
Blochmann, H., on the geography and history of Bengal, No. II., 280 ; account of Ismail Khan, 215  
Borpathar, near Dimápur, 3  
Bowring (Sir J.), on the great Pegu war, 7  
Brahmaputra, course of the, 93  
Braj, etymology of 351  
bricks, enamelled, 303*a*.  
Buchanan (Dr.), on Sunárgaon, 87  
Buddal, near Dinajpur, 356  
Buddha, tooth relic of, carried to Ava, 10  
Buddha's death, 263  
Bughra Khan, Náçiruddin Mahmúd, 84  
Bughra Khan, meets Kai Qubad, 288  
Bughra Shah, son of Firáz Shah, 289, 291, 293  
Burekhardt, on the Wahhabis, 68  
Burhi Ganga, confluence of the Brahmaputra and the, 94  
Butler (Col. J.), notice of Dimapur, 1  
Byanarit, King of Siam, 6

**C**ARMATHIANS, *vide* Karámitah.  
Chaitanya, 306*n*.  
Chand Rai of Bilkrampúr, 199, 202  
Chaura, tomb of Pahlawán Shah at, 201  
Cheros, the tribe, 241  
Chittagong, copperplate of 1243 A. D., 318  
Churamon, near Ekdalah, 244  
Coins, Col. Hyde's hoard of Sassanian, 99 ;  
new gold of Mahmúd Shah, 97 ; of  
Dihli Kings, 97 ; of Bengal Kings, 288,  
295 ff.  
Copperplate, found at Chittagong, 318  
Corancez, on the Wahhabis, 68  
cowries, used as coins, 283

**D**ALALPUR, weaver habitations at, 95  
 Dalal Ghazi, son of Husain Shah, 281  
 Dalton, on the conquest of Palamau, 240  
 Damsetjerd, a place in 'Omán, 118  
 Damant, G. H., on Sháh Isma'il Ghazi, 215  
 Daráyah, taken by Ibrahim Pasha, 68  
 Dáúd Khan, attacks Palamau Fort, 240  
 Delmerick, on a new Mahmúd Sháhí gold coin, 97  
 Dhafar, in 'Omán, 192  
 Dháka, seat of Mughul government transferred to, 86  
 Dhauk, the Benú el-Haríth settle at, 117  
 Dhenwaj Rai of Sonárgaon, 83  
 Dibba, in 'Omán, 118, 188

Dimapur, Asām, ruins at, 1  
*drona*, an areal measure, 320  
*dun*, *vide drona*  
Dunsiri, ruins on the, 1

**E**KDALAH, site of, 244  
Era of the Guptas, 364  
Esher, city of, 185  
Etymology of local names in Northern India, 324

**F**AKHRUDDIN Mubárak, revolt of, 85  
Fazilat Qazi, Amin of Bengal, 198  
*Ficus indica*, 194  
Firuz Shah I, of Bengal, 291  
Firuz Shah II, inscriptions and coins of, 298  
Fiuuz Shah, succeeds Mahmud Shah, 97  
Fitch (Ralph), account of Pegu, 11  
" in Sunárgaon, 86  
Floris (Peter), account of Pegu, 11  
Foster, temple of Jayságar, Asám, 311  
Frankincense, Arabian, 186

GADADHAR, king of Asam, 312  
*ganj*, in local names, 345  
*ganic*, 'a village,' derivation of, 325  
*garh*, in local names, 344  
Garh Jarepa, legend of, 284  
Gaudas, a tribe, 106  
Gaurian Languages, Comparative Grammar of the, 22  
Gawárs, or aboriginal races, 240*n*.  
Ghassán-bin 'Abdullah, Imám of 'Omán, 124  
Ghiyásuddin Bahádur, surnamed Bahádur Shah, 85  
Ghiyasuddin, governor of Asam, 281  
Ghiyasuddin Tughluqshah, helps Shiháb-uddin, 85  
Goaldih, ruined mosque at, 92  
Godwin-Austen (Major H. H.) on the ruins at Dimapur, 1  
Golaghat, north of Dimápur, Ásám, 1  
Gowalpara, battle at, 86  
*gráma*, in local names, 338  
Greek words in Sanskrit, 272  
Greeks, (the) and the Yavanas of Sanskrit writers, 246  
Growse, Etymology of local names in N. India, 324  
Gupta kings, chronology of, 364

HABIBPUR, tomb of Pagla Sahib  
90  
*hd.*, in local names, 339  
Hadhranaut, 113  
Hadhr and Bedô, 193



Háfiz, the poet, corresponds with A'zam Shah of Bengal, 88  
 Hajiganj, Fort of Islám Khan at, 94  
 Hajo, the Koch chieftain, 282  
 Hakim-bin el-Mulla, Imám of 'Omán, 133  
 Hanthawati destroyed, 11  
*hárd*, in local names, 346  
 Harachandra Chakravarti, Pandit, on a Pala Inscription, 356  
 Harischandra Pala, of Shabar, 200  
 Hariyánaka, 105  
 Harún el-Rashid, invades 'Omán, 123  
 el-Harth, a tribe in 'Omán, 196  
 Hasan, Imam of 'Omán, 133  
 Hátim Khan, governor of Bihar, genealogy of, 292  
 Hawari-bin Matraf, Imám of 'Omán, 133  
 Hejjaj, sends armies to 'Omán, 119  
 Heleyn (Peter), Cosmography of, 86  
 Herbert (Sir J.), on Sunárgaon, 86  
 Himyarites, 195  
 Hinduism, introduced into Ásám, 313  
 Hindus, their conservatism, 328  
 Hoernle (Rev. A. F. R.), on the Comparative Grammar of the Gaurian languages, 22  
 Honat, son of Malik-bin Fahm, 113  
 Hormazd IV, coins of, 99  
 Huns, the, 361  
 Husain Shah of Bengal, 90, 280; inscriptions and coins, 301  
 Husain ul-Maghribi, a Maliki mufti, 70  
 Hunter, Dr. W. W., on Kelaria, 354  
 Hyde (Col. H.), Sassanian Coins of, 99

**I**BADHIS, sect of, 121, 189  
 Ibn Batutah in Bengal, 85 [habis, 68  
 Ibrahim Pasha, puts to death the Wah-'Ibri, or 'Obri, in 'Omán, 194  
 Igarah Sindhu, Man Singh advances to, 213  
 Ikhtiyaruddin Ghazi Shah, 85  
 Ilah Nawaz Khan, of Haibatnagar, 211  
 Ilyas Shah, of Bengal, 86, 245  
 Imams, different kinds of, 191  
 Imam Ahmad Ibn Hambal, 73  
 Indor-kherá, inscription found at, 363  
 Inscriptions, notes on the Palam Baoli, 104; on the Buddal Pála, 356; on the Chittagong plate, 318; on the Skanda Gupta plate, 363; on Bengal Muhammadan inscriptions, 280 ff  
 Ionian, meaning of the word, 252  
 'Isa Khán, of Khizrpur, 199, 213, 209  
 Isfandiyar Beg, son of Allah Yar Khan, 286  
 Islam, introduced in 'Omán, 118  
 Ismail Ghazi, history of, 217  
 Izki, in 'Omán, 129, 190

**J**AIT Mal, of Bengal, turns Muhammadan, 85

Jajnagar, invaded by Tughril, 83  
 Jalaluddin, *alias* Jait Mal, 85  
 Jalaluddin Fath Shah, inscription of, 90  
 Jangalbari family, 211  
 Jas Pal, of Talibabad, 200  
 Jayságar, Upper Ásám, 311  
 Jebel el-Akhdhar, in 'Omán, 194  
 Jeifar, one of the sons of Julanda, 118  
 Jezirat el-Khadra, 165  
 el-Jow, in 'Omán, 187, 190  
 el-Jowf, 113  
 Julanda, sons of, in 'Omán, 118; Imam, 122  
 Julfar, in 'Omán, 189  
*julus* names of Indian kings, 297

**K**A, kí, in local names, 345, 346  
 Kachhári Raja founded Dimapur, 1  
 Kadam, a place in 'Omán, 192  
 Kai Kaus Shah, son of Bughra Khan, 291  
 Kalagachhi, near Sunárgaon, 87  
 Kalárs, a tribe, 355  
 Kalhat, in South Arabia, 113, 186  
 Kandarpa Narayana of Chandradip, 199, 205  
 Kamal Shah, of Durmut, 285  
 Kambohs, tribe of the, 260n.  
 Kamrup, conquest of, by Husain Shah, 281  
 Kanta Duar, Legends at, 216  
 Karamitela, sect of, invade 'Omán, 133, 191  
 Karfarmá Sáhib, 200  
 Keralas, a tribe, 106  
 Kernan, 117  
 Keshf-ul Ghummeh, or Annals of 'Omán, 111  
 kháçah cloth of Sunargaon, 87  
 Kháçnagar Tank in Sunargaon, 92  
 Khalil-bin Shathan, Imam of 'Omán, 139  
 Khárijis, a sect, 189  
 Khasi Hills, monoliths on the, 5  
*kherá*, in local names, 344  
 Khizrpur, Mosque near, 212  
*khoh*, in local names, 344  
 Khundkar Muhammad Yusuf, 89  
 Khusru I. Parwiz, coins of, 99  
 Khwajah Jahan, of Dilhi, 87  
 Kilwah, in 'Oman, 165  
 Kiratas, an aboriginal race, 106

**L**AK'HAN Manik, of Bhalush, 199, 203  
 Lahsa, in 'Omán, 194  
 Lakshman Sen, of Bengal, 82  
 Larwa Raja, 239n.  
 Latas, a Himalayan tribe, 106

**M**AGH dighi, in Sunargaon, 88  
 Magrapara, antiquities of, 89  
 Mags in Sunargaon, 86



Mahendra Narayana, son of Baldeo Narayana, 285  
 Maheyreh, in 'Omán, 118  
 Mahin-tha-ra-thi-rat, 8  
 Mahmud Shah of Dihli, gold coin of, 97  
 Mahmud Shah of Bengal, inscriptions and coins of, 294  
 Mahmud Shah III, inscriptions and coins of 309, 294  
 Mahtab Ghazi, succeeds Bahádur Ghazi, 200  
*Mai*, and *Mau*, in local names, 342  
 Makinat, or Makaniyat, in 'Omán, 193  
 Makkah (Mecca), taken by the Wahhábis, 68; taken by the Karamitah, 191  
 Maldah, inscriptions from, 298 ff.  
 Malik-bin Fahm, the first el-Azd at 'Omán, 112, 184  
 Man Singh, combat of, with 'I'sá Khan, 213  
 Marco Polo, on Southern Arabia, 185, 192  
*Marzaban*, of the Persians in 'Omán, 113  
 Maskat, capture of, by the Arabs, 164; spelling of the name of, 189  
 Mathura, 324; etymology of, 336, 351  
 Maungsetya, governor of Ava, 7  
 Mazun, the Persian name of 'Omán, 116, 187  
 Mengkyitewa, 6  
 Meng-re-kyautewa, of Pegu, 7, 9  
 Mikirs (the), of Dimápur, 2  
 Minakhali, probable course of the, 94  
 mint marks, on Sassanian coins, 101  
 Mir Jumlah, forts built by, 211  
 Mirpur, Muhammadan pilgrimage at, 88  
 Misra family, 363  
 Mogaung, expedition against the, 6  
 Mohammed-bin Abu 'Affán, Imám of 'Omán, 123  
 Mohammed-bin Habés, Imám of 'Omán, 139  
 Mohammed-bin el-Hasan, Imám of 'Omán, 132  
 Mohammed-bin Khanbash, Imám of 'Omán, 140  
 Mohammed-bin Nasir, death of, 183  
 Mohammed-bin Núr, governor of Bahrain, 130  
 Mohammed-bin Yezid, Imám of 'Omán, 133  
 Mohammedí, a coin, 196  
 Mohungdijua near Dimapur, 3  
 Mozaffar Shah, coins of, 280  
 Mu'azzamabad, 86  
 Mubarak Shah, of Sunárgáo, 85  
 Mughisuddin, Sultán, styled Tughríl, 83  
 Muhammadan architecture of Dimápur, 3  
 Muhammad Bakhtiyár Khilji, 82  
 Muhammad, Shaikh, on the Unity of God, 71  
 Muhammad Tatar Khan, governor of Bengal, 287  
 Muhenná-bin Jeifar, Imám of 'Omán, 125

Muhenná-bin Sultán, Imám of 'Omán, 166  
 Mukhawwaq, an Imám, 74  
 Munawwar Khán of Bengal, 211  
 Munna Sháh Darwish, tomb of, 89  
 Munshiganj, Fort of Islám Khan at, 94  
 Músá Khan Diwan, of Bengal, 210  
 muslins of Sunárgáo, 95  
 Mussendom, Cape, 195  
 Musundar Ghazi, of Asám, 281  
 Muttama, 8  
 Muwásis, an aboriginal tribe, 240n.

**N**ABAWI, an Imám of 'Omán, 74  
 Nadia, capital of Lakshman Sen, 82  
*nagar*, in names of towns, 343  
 Najd, Wahhabis of, put to death, 68  
 Names, local, in N. India, 324  
 Nanda Bureng, Mahá-upa-radza, 6  
 Nangalband, Panchami ghát near, 93  
 Narayanganj, ruined Mosque at, 90  
 Násir bin-Marshid, Imám of 'Omán, 165  
 Naushirwán, coins of, 99  
 Nayápará, Chaudharis of, 203  
 Nebaheneh, princes of 'Omán, 144, 192  
 Nezwa, in 'Omán, 138, 165  
 Nga-naung-dau, 11  
 Ngyáung Ram Meng, 10  
 Num Rai, of A'ra Phulbari, 202  
 Neh, a town in Mathurá, 349  
 Nominal Terminations, phonetic changes in the Gaurian languages, 48  
 Nusrat Shah of Bengal, Inscriptions and coins of, 92, 280, 306  
 Numaligarh, remains of, 3

**O**BRI', or 'Thri, in 'Omán, 194  
 Ogle (Mr. M. T.), 1  
 O'Kinealy, J., on the Wahhábis, 68  
*oli*, a termination in local names, 333  
 'Omán, annals of, 111; held by the Persians, 113, Geographical divisions of, 190; also called Mazun, 116, 187  
 'Omar-bin 'Abdullah, governor of 'Omán, 121  
 'Omar-bin Muhammad, Imám of 'Omán, 133  
*on*, in local names, 338  
 Orisá, or Utkala, 361

**P**AHLAWAN Sháh, 200  
 Painam, ancient buildings at, 91  
 Paláman, picture representing the conquest of, 240  
 Pála Rájás, their residence, 200; their ministers, 363  
 Pála inscription, 357  
 Pálam Báoli Inscription, notes on, 104; Sanskrit titles of Dihli Kings in the, 105  
 Panch Pir Dargah at Sunárgáo, 88



Pán-wa, battle at, 7  
 Paramananda Rái, Ralph Fitch on, 207  
 Partáb, the Chero rájá, 241  
 Patanjali, 263  
*patti*, in local names, 344  
 Pegu, History of, 6, 10  
 Pembu, 195  
 Persians, hold 'Omán, 113; expelled from 'Omán, 119  
 Phayre (Col. Sir A. P.), on the History of Pegu, 6  
 Phra-naret, 8  
 Phrá Thammas-raxa-thirat, made tributary king of Siam, 8  
 Pimenta (Nicholas), historian of Pegu, 11  
 Pir A'dam, Qazi of Bilkampur, 83  
 Ponkai Dewan, *alias* Shah 'Abd ul-'Ala, 90  
 Portuguese, capture 'Oman, 193, 194  
 Portuguese, in 'Oman, 151 ff.  
 Portuguese, in Sunárgaon, 86  
 Prakrita derivatives of the Gaurian languages, 58  
 Pran Nath Pandit, on a Chittagong copperplate, 318  
 Pratápachandra Ghosh, on the Buddal Pála inscription, 356  
 Prome, joins against Ava, 7  
 Ptolemy, on Southern Arabia, 195  
*pur*, 'a town,' occurrence of this word in local names, 339

**Q**ADAR Khan, takes possession of Sunárgaon, 85  
 Qorán, commentaries on, 74

**R**AJENDRALA'LA MITRA, on the Pálam Bóoli Inscription, 104; on the Yavanas, 246; on the Skanda Gupta Inscription, 363  
*rá*, in local names, 346  
 Rampal, the seat of the government of Ballal Sen, 83  
 Rangpúr, shrines in, 215  
 Ráshid-bin el-Nadhr, Imám of 'Omán, 128  
 Ráshid-bin el-Walid, Imám of 'Omán, 135  
 Rennell (Major), on Sunárgaon, 87  
*Risalat ush-shuhadá*, Persian text of, 222  
 Ross, (E. C.) on the Annals of 'Omán, 111  
 Rupiya Khán, of Sripúr, 207

**S**A'DIPUR family, chronicles of the, 86, 87  
 Sagar Island, 105, 106  
 Sa'id-bin 'Abdullah, Imám of 'Omán, 134  
 Salih, governor of 'Omán, 120  
 Salimah, son of Malik, 117  
 Salt-bin Malik, Imám of 'Omán, 128  
 Salt-bin el-Kásim, Imám of 'Omán, 132  
 Samáguting, 2

*serde*, in local names, 344  
 Sassanian coins, 99  
 Sayyid, meaning of the title, 192  
 Seyf-bin Sultán, Imám of 'Oman, 169  
 shah-nam, a fine muslin, 95  
 Sháh 'Abd ul-'Ala, tomb of, 90  
 Sháh 'Ali, tomb of, 88  
 Sháh Ismá'il Gházi, notes on, 215  
 Sháh Shujá', 95  
 Shaidá, revolt of, 85  
 Shaikh Gharib-ullah, Mosque of, 91  
 Sher Sháh, Bengal divided by, 198  
 Sherpúr Daskahániá, slab from, 283, 284  
 Shihábuddin Bughra Sháh of Bengal, 85  
 Shihr, one of the districts in 'Omán, 118  
 Siam, invaded by Bureng Náung, 7  
 Sikandar Sháh, of Bengal, 86, 245  
 Silhat, 283a.  
 Sirhán bin Sa'id, Annals of 'Omán by, 111  
 Sirr, in 'Omán, 187  
 Siau Pála, of Kapasia, 200  
 Skanda Gupta, 365  
 Sonai, daughter of Chand Rai, 202  
 Sousa, Portuguese historian of Pegu, 11  
 Sripur, Island of, 86  
*sthalí*, in local names, 340  
*sthána*, in local names, 339  
 Subhán Dád Khán, of Jangalhari, 211  
 Sulaimán and Sa'id, of 'Oman, 119  
 Sultan-bin Saif, Imám of 'Oman, 164  
 Sunárgaon, called Hazrat Jalál on coins, 86; boundaries of Sirkar, 86; Notes on, 82; Modern, 87; rice trade of, 87  
 Syriam, 10

**T**ABENG-SHWE'-HTI, Emperor, 7  
 tan-zib, a fine muslin, 95  
 Táungó, joins against Ava, 7  
 Tavoy, 10  
 Temple at Jayságar, Asám, 311  
*thak*, in local names, 344  
 Tiparah, 83a., 318, 321  
 Todar Mall. Raja, settlement of lands by, 86  
 Triveni, fort of Islám Khán at, 94  
 Tughluq Sháh, death of, 290  
 Tughril, defeats Amin Khán, 287  
 Turksádah, surname of Hurmazd IV, 99

**U**CHCHHATPUR, 104  
 'Uqail bin-Yahya al-'Alawi, 70  
*ur, uré, uru*, a Basque word, meaning 'a village', 334  
 Utkalas, 361

**V**ALMIKI, anecdote of Ponkai Diwan similar to that of, 90



Varahram Chobin, Sassanian King, 99  
*vatt, val*, in local names, 347

**W**ADI' el-Nakhr, in 'Omán, 192  
 Wahhábis, Arabic pamphlet on the, 68 ;  
 Doctrine and History of the, 68  
*wála*, in local names, 346  
 Walid-bin 'Abdul-Malik, death of, 120  
 Wáarith-bin Ka'b, Imam of 'Omán, 123  
 Westmacott, (Mr. E. V.), on the site of  
 Ekdálah, 244 ; discovers Muhammadan  
 inscriptions near Máldah, 280 ; on the  
 Buddal Pála inscription, 356  
 Wise, Dr. J., on the Bárah Bhúyas, 197 ;  
 on Sunárgáon, 82

**Y**ABRI'N, in 'Omán, 165  
 Yavanas, derivation of the term, 247  
 Yazid, governor of Irák and Khorásán,  
 121  
 Yodayá, invested by Pegu, 8  
 Yúsufganj, Masjid at Magrépára, 91  
 Yúsuf Shah, Inscriptions and Coins of, 29,  
 280  
 Yuthea, siege of, 7

**Z**ANZIBAR, 189, 196  
 Zenj, (Zanzibar) 120  
 Zikki, in 'Omán, 190  
 Ziyád, governor of 'Omán, 121







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(Nos. I to IV.—1874: with nineteen plates.)

EDITED BY

THE PHILOLOGICAL SECRETARY.

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"It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish, if such communications shall be long intermitted; and it will die away, if they shall entirely cease." SIR WM. JONES.

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# CONTENTS

OF THE

JOURNAL, ASIATIC SOCIETY OF BENGAL, FOR 1874,

PART I.

## No. I.

	<i>Page</i>
On the Ruins at Dímápúr on the Dunsirí River, Ásám.—By MAJOR H. GODWIN-AUSTIN (with six plates), .....	1
On the History of Pegú.—By MAJOR-GENERAL SIR A. P. PHAYRE, K. C. S. I., .....	6
Essays in aid of a Comparative Grammar of the Gaurian Languages. No. V.—By the Rev. Dr. A. F. R. HOERNLE, Badaras, .....	22
Translation of an Arabic pamphlet on the history and doctrines of the Wahhábís, written by the grandson of 'Abdul Wahháb, founder of the sect.—By J. O'KINEALY, C. S., .....	68
Notes on Sunárgáon, Eastern Bengal.—By DR. JAMES WISE, Dháká, (with a plan and a plate), .....	82
Note on a new gold coin of Mahmúd Sháh bin Muhammad Sháh bin Tughluq Sháh, of Dihlí.—By J. G. DELMERICK, Dihlí, (with a woodcut), .....	97

## No. II.

Note on a hoard of 543 Sassanian Coins in the possession of Col. H. Hyde, R. E.—By the HONORABLE E. C. BAYLEY, C. S. I. (with a plate), ...	99
Note on the Pálam Báoli Inscription.—By RA'JENDRALA'LA MITRA (with a plate), .....	104
Annals of 'Omán, from early times to the year 1728, A. D. From an Arabic MS. by SHEYKH SIRHA'N-BIN SA'I'D-BIN SIRHA'N-BIN MUHAMMAD of the Benú 'Alí tribe, of 'Omán. Translated and annotated by E. C. Ross, Political Agent at Muscat, .....	111





	<i>Page</i>
No. III.	
On the Bárah Bhúyas of Eastern Bengal.—By DR. JAMES WISE, Dháká (with a plate), .....	197
Notes on Sháh Ismá'il Ghází, with a sketch of the contents of a Persian MS., entitled "Risálat ush-Shuhadá," found at Kántá Dúár, Rangpúr.—By G. H. DAMANT, B. A., C. S., .....	215
Persian Text of the Risálat ush-Shuhadá, .....	222
Letter by COL. E. T. DALTON, C. S. I., Commissioner of Chutiá Nágpúr, on a large picture representing the conquest of Palámau, in 1660, by Dáúd Khán, Aurangzib's General, .....	240
Note on the site of Fort Ekdálah, District Dinájpúr.—By E. V. WESTMACOTT, C. S. (with a map), .....	244
On the supposed identity of the Greeks with the Yavanas of the Sanskrit Writers.—By RA'JENDRALA'LA MITRA, .....	246
Contributions to the Geography and History of Bengal (Muhammaddan Period.) No. II.—By H. BLOCHMANN, M. A., Calcutta Madrasah (with a plate), .....	280
No. IV.	
The Temple of Jayságar, Upper A'sám.—By J. M. FOSTER, F. S. A., (with four plates), .....	311
Note on the Chittagong Copper-plate, dated Sáka 1165, or A. D. 1243, presented to the Society by A. L. Clay, Esq., C. S.—By PRANNA'TH PANDIT, M. A. (with a plate), .....	318
The Etymology of Local Names in Northern India, as exemplified in the District of Mathurá.—By F. S. GROWSE, M. A., B. C. S., .....	324
Transcript of the Pála Inscription of the Buddal Pillar, Dinájpúr, by Paṇḍit HARACHANDRA CHAKRAVARTI', communicated by E. V. WESTMACOTT, C. S. With an annotated translation by PRATA'PACHANDRA GHOSHA, B. A., .....	356
Note on an Inscription of the time of Skanda-Gupta from Indorkherá.—By RA'JENDRALA'LA MITRA, (with a plate), .....	363
Index, .....	375



# LIST OF PLATES

IN

JOURNAL, ASIATIC SOCIETY OF BENGAL, FOR 1874,

PART I.

- 
- Pl. I (p. 3). Plan of Dímápúr, A'sám.  
 Pl. II (p. 3). View of Dímápúr, A'sám.  
 Pl. III (p. 3). Ditto ditto.  
 Pl. IV (p. 3). Gateway at Dímápúr.  
 Pl. V (p. 5). Architectural Ornaments on the Temple of Dímápúr.  
 Pl. VI (p. 5). Ditto ditto ditto.  
 Pl. VII (p. 88). Map of Sunárgaon.  
 Pl. VIII (p. 88). Tomb of Ghiyásuddín A'zam Sháh of Bengal, at Sunárgaon.  
 Pl. IX (p. 100). Mint marks on coins struck by Khusrú I, Hormazd IV, and Khusrú II.  
 Pl. X (p. 104). Facsimile of the Pálam Báolí Inscription.  
 Pl. XI (p. 202). The Rájbari Math on the Padma, Bikrampúr District.  
 Pl. XII (p. 244). Map of the Environs of Ekdálah, Parganah Dhanjar, Dínájpúr.  
 Pl. XIII (p. 293). Unpublished Coins of the Muhammadan Kings of Bengal.  
 Pl. XIV (p. 311). The Jayságar Temple, Upper A'sám.  
 Pls. XV, XVI, XVII (p. 315). Architectural Ornaments on the Jayságar Temple.  
 Pl. XVIII (p. 318). The Chittagong Copper-plate.  
 Pl. XIX (p. 363). Facsimile of an Inscription of the time of the Skanda Gupta from Indor-kherá.
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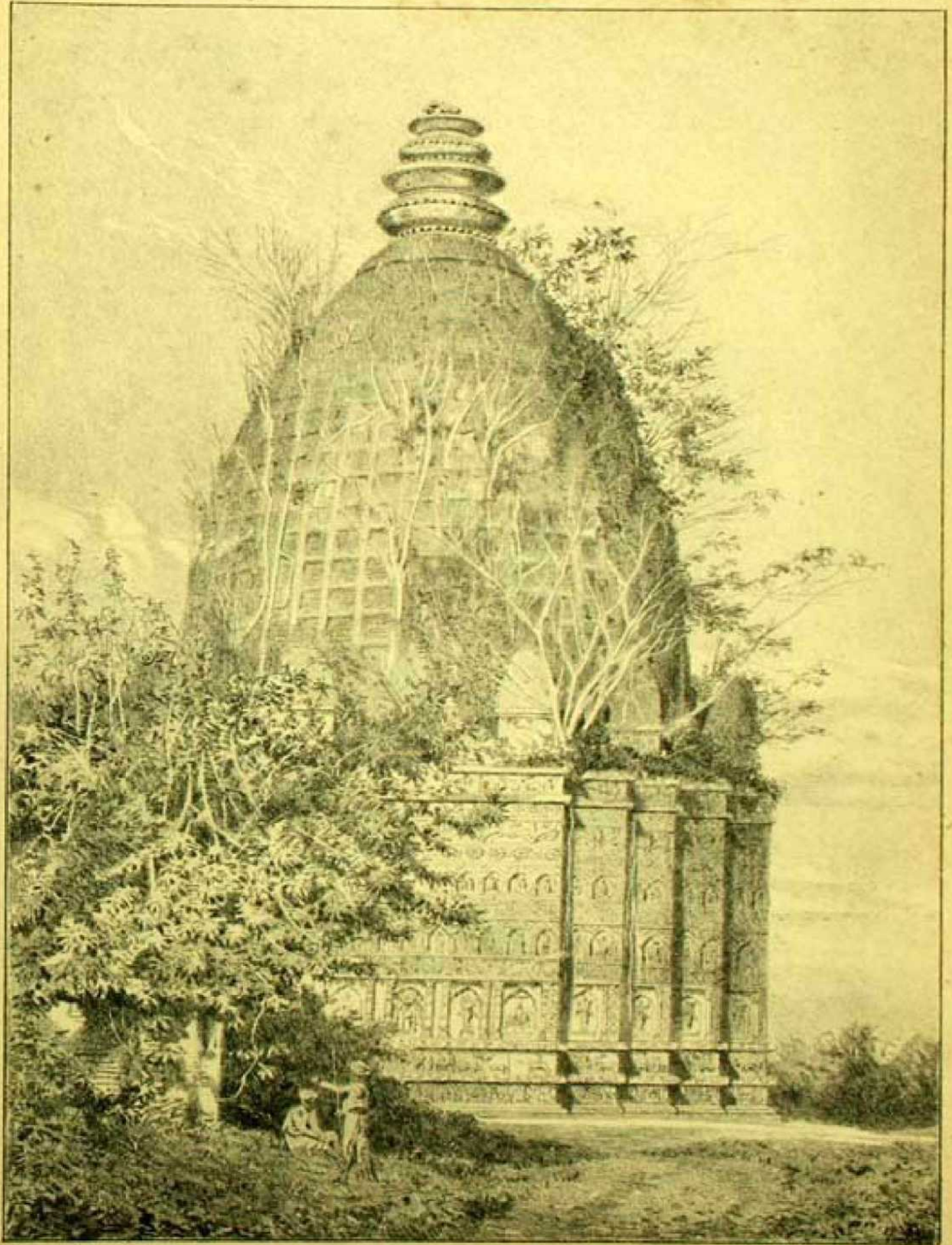
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PART I.

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 — 116, last line, *for* Zohair<sup>23</sup> *read* Zohair<sup>24</sup>  
 — 133, line 1, *for* KA'SIM *read* BIN EL-KA'SIM  
 — 196, line 12, *for* Menáh *read* Hináh  
 — 249, line 14, *for* Zeus *read* Hermes  
 — 273, line 12, *for* κοινος *read* γονια  
 — 268, line 29, *for* मधुसूदं *read* मधुसूदं  
 — 268, line 30, *for* मिवाजा *read* मिवाजा  
 — 268, line 33, *for* मन्ना *read* मन्ना  
 — 268, line 33, *for* म्यहीम् *read* म्यहीम्  
 — 268, line 37, *for* विकयन्ते *read* विनयन्ते.  
 — 267, line 27, *for* Mauriya *read* Sunga  
 — 286, note, *for* Parichhat *read* Parichhit  
 — 293, note, *for* given *read* gives
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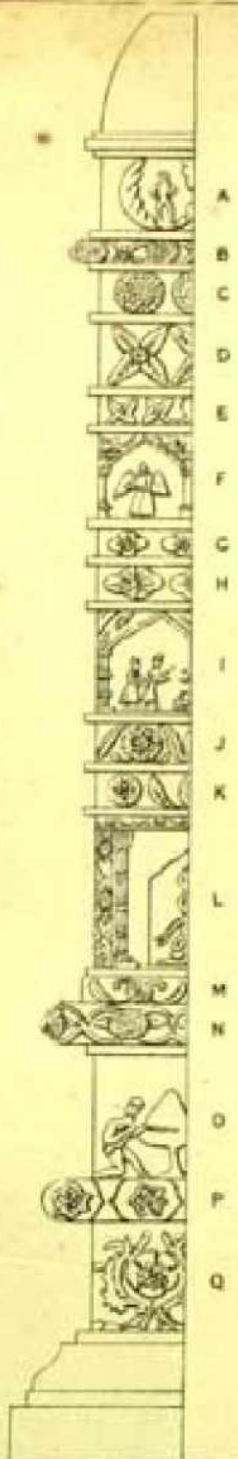


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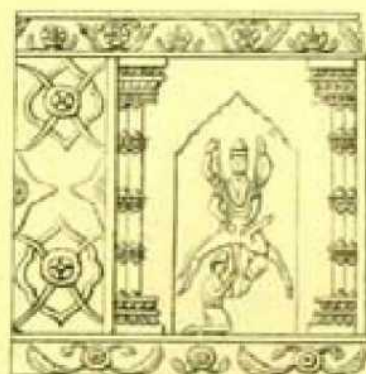
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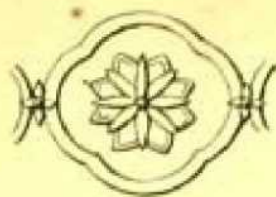
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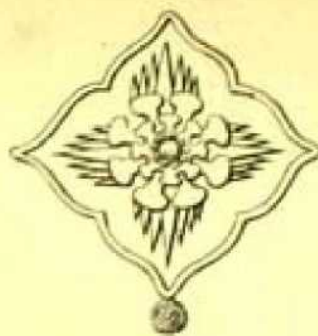
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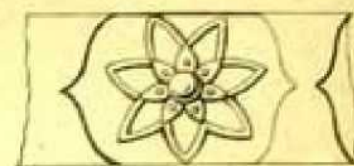




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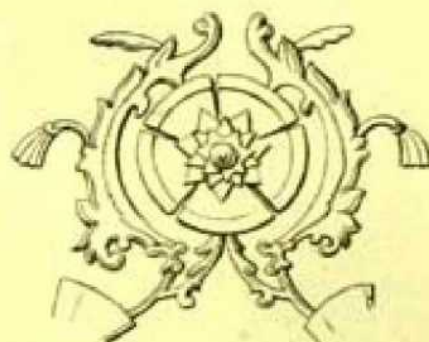
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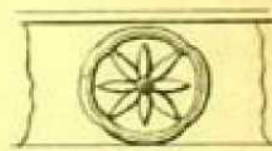
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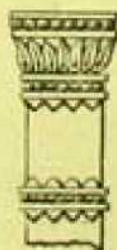
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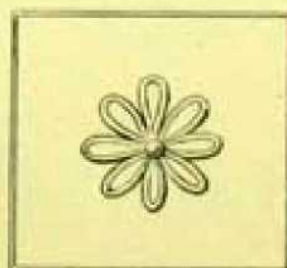
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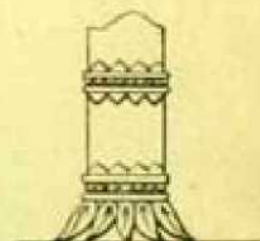
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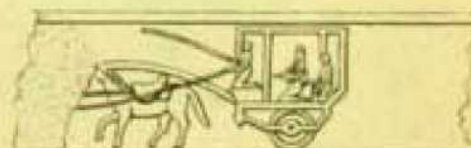
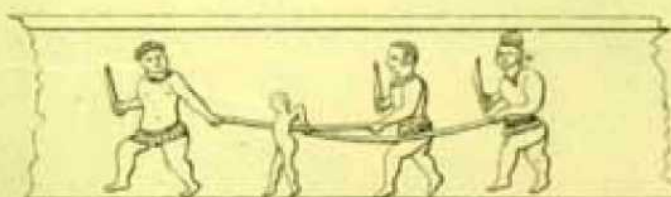
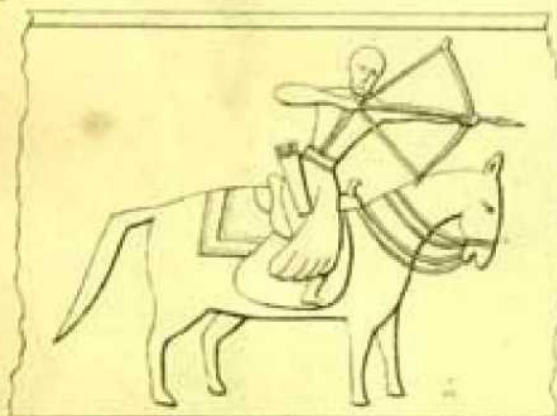
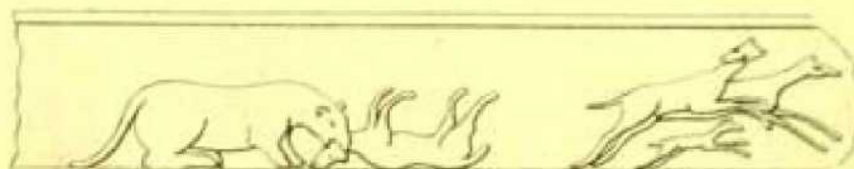
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# JOURNAL

OF THE

## ASIATIC SOCIETY.

Part II.—PHYSICAL SCIENCE.

No. II.—1874.

RECORD OF THE KHAIRPUR METEORITE OF 23RD SEPT. 1873.—*By* H. B. MEDLICOTT, Esq., *Officiating Superintendent of the Geological Survey of India.*

[Received July 1st, 1874.]

At the meeting of January of this year several fine specimens were exhibited of a meteorite that had fallen on the 23rd September, 1873, partly in the State of Bhawalpur and partly in the Multan district, on either side of the Sutlej. The largest pieces and the greatest number fell close about the village of Khairpur,  $72^{\circ} 12' \text{ E. long.}, 29^{\circ} 56' \text{ N. lat.}, 36$  miles east-north-east of Bhawalpur. It has hence been called the Khairpur Meteorite, though the name seems to be a very common one throughout this region of the Punjab. As we are not likely to obtain any more information on the subject, what has been received may be recorded. It is not as exact as could be desired, but as much so as can usually be attained without special inquiry on the spot.

The position of the known falls have been recorded on maps, received from Major Minchin, Political Agent for Bhawalpur, and from Captain Lang, Deputy Commissioner for the Multan district. The number of stones that fell about Khairpur is not mentioned. Five are accounted for, but from the terms of the forwarding letters it may be inferred that others were procured. On the Multan side, Captain Lang mentions the finding of 7 pieces, 4 at different spots near Gogewala well, close to E. S. E. of Mahomed Moorut; two at Khurampur on right bank of the Sutlej, and one at Araoli two miles to N. W. of Khurampur. Of these one only is in known hands.



It was received from Col. Ralph Young, R. E., Commissioner of Multan, as having fallen near Mylsi, which is 12 miles from the nearest of the above named places; but the stone is probably one of those seven. The range thus covered by the fall has a marked lineal direction, bearing  $35^{\circ}$  S. of E., N. of W., with a length of sixteen miles and a breadth of about three.

*List of Specimens.*

		lbs.	oz.	gr.
A	Lahore Museum, weight, .....	10	12	126
B	Indian Museum, .....	9	11	219
C	" " .....	7	14	236
D	Geological Museum, .....	1	2	412
E	" " .....		3	79
F	" " .....		6	70
Total ..		30	2	266

The five first fell at Khairpur. In the letters forwarding B and C, and D and E, separately, it is said "These stones were taken from several pieces that fell in the neighbourhood of Khairpur:" and that they were "found imbedded in the earth at a depth of about  $1\frac{1}{2}$  feet at various places, about a mile and a half from Khairpur to the eastward, and about a mile apart." F is the one from the Mylsi Pergunnah.

All are very irregular in shape, and more or less broken. Some of these fractures are evidently done by hand, others probably at the moment of falling; while several seem to have occurred during the fall, the glazing being partially renewed. In two of the latter cases, the fracture forms a nearly plain surface.

Nothing exceptional is apparent in the composition of this Meteorite; it is a stone of the usual steel gray colour, and dense crypto-crystalline texture.

The specific gravity of F is 3.66.

Several accounts of the appearance of the fall are appended:

*Note by the REV. G. YEATES, Church Missionary Society, Multan, received through MAJOR MINCHIN.*

1. "On the morning of the 23rd of September, 1873, at 5.10 A. M., a meteor was observed from a spot about 12 miles south of Multan, in the Punjab (Lat  $29^{\circ} 20'$  East, Long.  $71^{\circ} 40'$  or nearly so).

"The observer was on the ground in the middle of a wide plain with nothing to obstruct the view. The morning was remarkably fine and clear, the sky unclouded, there was a faint glow of light in the East, but the sun was still about 45 minutes below the horizon.



2. "It is difficult to estimate the size of the meteor, as it was more a cluster of meteors, each one far exceeding the size and brightness of a star of the first magnitude, than a 'fireball.' The breadth of the train left behind them must have been from  $3^{\circ}$  to  $5^{\circ}$ . Venus was at the time about  $25^{\circ}$  above the horizon and very bright, but she was thrown quite in the shade when compared with the brightness of the meteor.

"Its first appearance in the west, towards which the observer's face happened to be turned, was so like a rocket which had reached its height and was just bursting, that the first impression was that some one in a distant village was amusing himself, at that early hour, with one that had remained over from a last night's display: but this idea was speedily dispelled, as, instead of dying out, it rapidly increased in brightness and continued to move on towards the observer, leaving a tail or train behind it. Its motion was not very rapid but steady, and by the time it had reached about  $10^{\circ}$  of the meridian, which it passed south of zenith, it assumed an exceedingly brilliant appearance, the larger fragments glowing with an intense white light with perhaps a shade of green, taking the lead in a cluster, surrounded and followed by a great number of smaller ones, each drawing a train after it, which blending together formed a broad belt brilliant fiery red. At this time it lit up the whole country, casting deep shadows and having the effect produced by the electric light. In this way it proceeded until it reached a point nearly due east, paling again a little as it drew near the horizon, when, about  $20^{\circ}$  above it, it appeared to go out, rather than to fall.

"The train it left continued very bright for some time and was distinctly traceable for more than three quarters of an hour afterwards; at first changing to a dull red, then, as the morning broke, to a line of silvery gray clouds which broke up into separate portions and floated away on the wind.

3. "From the rough diagram attached, it will be noticed that the course of the meteor was unusually long, extending through very nearly  $180^{\circ}$ , its first appearance, as sketched, was as near as possible in a spot close to the star Algenib, which was just faintly visible, about  $15^{\circ}$  above the horizon in the west. It then passed close under Orion, the lowest star of which (Rigel) was very near if not on the meridian, and disappeared on the other, east side, about the same height from the horizon as it was noticed at, in the beginning of its course.

"For some time after the meteor had disappeared, but while the train still continued to attract notice, there was perfect stillness which was interrupted by a loud report followed by a long reverberation which gradually died away like the roll of distant thunder.

"The report seemed to come from the south, in which direction there was a tope of Pepuls, about quarter of a mile off, but one man, who was a



witness of it, said it seemed to him to come from the north, as he said the artillery were practising in Multan. The time that elapsed between the bursting of the meteor, when first noticed, and the report was about four minutes."

Mr. Yeates describes the meteor in the meridian as attaining an altitude of  $50^{\circ}$  from his point of view, which seems to be about 30-40 miles from the projected path of the meteor, and about 50 miles from Khairpur in the direction of the major axis of the area covered by the fall.

The following observations are extracted from a letter of Major Minchin's.

"I was in camp at a place about 6 miles from Ooch and 50 miles from Bhawalpur at the time, and was roused from sleep by a brilliant light followed by a loud thunderclap. The next day we heard from Bhawalpur that the explosion of the meteorite was so violent as to shake the house and slam all the doors; and in the course of a few days the Tuhsildar of Khairpur sent me in 3 meteoric stones, 2 of which were forwarded to you and one to the museum at Lahore, which he reported had fallen at places about a mile apart and about a mile beyond Khairpur, which is 36 miles east of Bhawalpur.

"One of the meteorites fell close to a man who had gone out into the jungle for the purpose of nature, and frightened him so much, that he hardly knew what occurred and was under the impression that the stone pursued him for two hours; but he shewed the spot where it fell which was the first piece found. I have had the spot marked approximately in the map you sent, and which is herewith returned, some portions fell in the Mylsi district on the right bank of the Sutlej.

"At Bhawulgur in this State, 80 miles from Khairpur, the meteor was seen but no explosion was heard; and I have been informed that it was seen at Bunnoo and Kohat on the frontier and also from the Terar hills above Peshawur.

"A correspondent in the *Pioneer* mentioned having seen it at Jodhpur, and Mr. W. Beckett saw it near Moradabad on his way from Nynee Tal. Stating it roughly, the meteorite would appear to have been visible within a radius of 300 miles of Khairpur."

The following observations are taken from the *Pioneer* newspaper, of the 30th September.

"Multan, 24th Sept.

"Sir,—The appearance of an extraordinary meteor, of which I daresay you will have notice from other quarters, may justify my venturing to describe it as seen from the neighbourhood of Multan, and under very favourable circumstances.



"Duty called me to be on the Shujabad road, about 13 miles south of Multan, on the morning of the 23rd instant. I had stopped for the night in one of the rest-houses, and rose early to continue my journey southward. While my man was getting the dog-cart ready, I walked on enjoying the fresh breeze which was from the south, and after a long and wearisome hot season was most grateful and reviving. I had gone on about half a mile and the cart had just come up to me when, as I turned my face full to the west, crossing over the road from the east, a brilliant star made its appearance right opposite me, about 15 degrees above the horizon. It moved on slantingly upwards and towards us, bursting almost immediately as a rocket, but without scattering to any extent, all the fragments or stars keeping close together, and marching on its way steadily but slowly across the whole heavens, crossing the meridian about 60° from the horizon close under the constellation Orion which was close to the meridian at the time, and proceeding on to a point in the east nearly exactly opposite to that at which it first appeared.

"From its first appearance it increased rapidly in brightness, and long before it had got half way, lit up the whole country with a greenish light, not unlike the effect of the electric light. The different fragments into which it broke up were distinctly visible, more than twenty of them I should say, all of a brilliant palish green, moving in parallel courses, two or three of the larger ones taking the lead in the centre, and each of them leaving a tail of red light behind it; these tails blending into one formed a huge band of light from one end of the heaven to the other.

"From the moment it shone out brilliantly we all stood, spell-bound, in perfect silence, the more marked in the dead stillness of the morning, and as it died out we stood watching the wonderful path it had trod. The effect was most thrilling, when silence was first broken by the *Ya Allah* of one of the servants. We still remained motionless, expecting nothing further, when a loud report, as of a number of cannon in the distance, shook the very ground under us, reverberation rolling on for a considerable time and dying away at length like distant thunder. Unfortunately, I had no watch about me at the time, nor indeed, had I, should I have thought of looking at it, to count the minutes between the explosion and the time its sound reached us, as I did not anticipate hearing it, but I should say, from experience in such things, that about three and half minutes must have elapsed. This, counting 1,100 feet per second, which is, I believe, the rate at which sound travels, would give about 45 miles as its distance at the time of its disruption. Its explosion must have taken place almost immediately after entering our atmosphere, through the denser part of which it must have passed. It had all the appearance of being very close: indeed for a moment the feeling was that it was coming unpleasantly so,



and contrasted remarkably with the dark background of the sky, which it did not illuminate.

"The train left behind remained very bright for some time and gradually faded. It was evidently affected by the wind, as it first broke up into a heavy irregular line, then into small detached clouds, which remained visible for upwards of an hour afterwards, and only disappeared when the brightness of the sun rendered them indistinct.

"This month has been very prolific in small meteors. I have noticed them in greater numbers than usual, but this one exceeds anything I have ever witnessed. On getting to Shujabad, 12 miles distant, I found that the noise had aroused many; some saw it, but it was difficult to judge from the description given whether it appeared more over-head or not. What I have heard of it here too, since my return, is too vague to form any opinion from. Perhaps other accounts of it may throw light on its extent, &c."

G.

*"Bhawulpore State, 24th September.*

"Sir,—On the morning of 23rd September, at 5 A. M., the following phenomenon was observed on the Chenab left bank, some sixty miles south-west of Bhawulpore. A luminous globe suddenly appeared under a clear sky, which lighted up the earth, in the full blaze of sun-light. The electric globe shot across towards the north-east over about sixty degrees of space, and seemingly was not more than a few hundred yards above the earth, when it disappeared in a shower of shooting stars. But six or seven minutes must have elapsed before the sound of its explosion was heard, which was a double detonation like the discharge of two heavy pieces of artillery close together, followed by loud and prolonged reverberation. Then all was still. The sun rose and the morning was fresh and the breeze cooler than usual at this time of year, giving the idea to the observers who were bound for the "Happy Hunting Grounds," that the blazing phenomenon had cleared the atmosphere in a remarkable manner. According to the lapse of time above noted, between the disappearance of the fire globe and the sound of its explosion, its fragments may have struck the earth from 77 to 91 miles off, somewhere between the Chenab and Sutlej rivers.

SHIKAREE."

These few and superficial data are recorded for the information of experts in the phenomena of meteorites. This fall seems specially remarkable for the very oblique direction of its course to the earth's surface.



CONTRIBUTIONS TOWARDS A KNOWLEDGE OF THE BURMESE FLORA.—  
*Part I.—By S. KURZ.*

[Received May 25th, read August 5th, 1874.]

In the present paper I purpose giving an abridged enumeration of Burmese plants, phanerogamic and cryptogamic, as far as they have come to my knowledge. The Burmese Empire is as yet too incompletely explored for the present communication to be looked upon otherwise than in the light of an attempt at collating the scattered material either published or deposited in Herbaria. An exploration of Ava, the Arracan Yomah and the Chittagong hills, will furnish large additions of Khasya hill plants, while the Tenasserim and Martaban hills abound in Malayan forms.

A bare list would have been of little use to the Indian botanist and still less so to the resident in Burma; I have, therefore, given short outlines of the distinctive characters of the genera as well as of the species. Such conspectuses are not always based upon sound characters, which in many cases can only be ascertained by a close examination of all the species composing the several genera; but still they will be found serviceable for handy identification of the plants of the better explored provinces of Burma. In the framing of the generic tables, I have chiefly followed the authors of the 'Genera Plantarum.' Of citations I have given only a selection, giving preference to illustrations. The remaining synonyms or references to synonyms may be found in Hooker's Flora of British India so far as that work has been published.

I have avoided as much as possible critical discussions, and have taken in hand only essential matters: to have done otherwise would only have increased the bulk of my contributions without materially assisting in the encouragement of the exploration of the Burmese Flora; for which purpose this enumeration is written.

I have also given further particulars about the habitats of the species and notices about frequency. Such are necessarily understood to refer only to provinces wherein I have myself travelled (Andamans, Pegu, Prome, Martaban and partially Arracan and Chittagong): information regarding the rest had to be compiled from herbarium-material. Flowering and fruiting time are given, but cannot always be relied upon, for the reason that contradictory dates are sometimes given by collectors.

I wished to have introduced here the soil question from an Indian point of view, but defer doing so until my experiences in this direction are more matured and have been verified by future explorations. In Burma my attention was directed more towards the woody vegetation, and the necessary information as regards this will be given elsewhere. Herbaceous



growth is for the greater part more regulated by physical and climatal factors, which in connection with moisture, the most powerful element in nature, bring about the greatest changes in vegetation. But still not an inconsiderable number of herbs are found in Burma and elsewhere in India which belong to Unger's class of *soil-steady* (*bodenstaetig*): such are especially many limestone and laterite plants, and, everywhere, the saline ones. The indication of the forests, etc., in which they grow will, however, at once give a more or less reliable key to the soil-requirements; the forests being more dependent upon the substratum than the herbaceous growth.

I have purposely selected for the different varieties of Burmese forests general denominations instead of naming them after characteristic trees, as is usually done. The sorts of forests or combinations of forest trees as distinguished by me are, so to say, the exponents of a complex of climatal physical and partially chemical influences which produce everywhere habitually and generically identical or representative equivalents. Thus we have sal-forests in India and eng-forests in Burma; dry forests in Behar and Northern Hindostan and again in the Prome district; mixed forests in the low Terai lands of the Himalaya and savannah forests in the Bengal Gangetic alluvium as well as in Burma; and so it is with the tidal forests, hill-forests, etc.

The distinction between *evergreen* and *deciduous* forests must always be the leading one in tropical countries, and such forests differ always most conspicuously in their vegetative components.

The former are divided into the littoral forests (tidal and mangrove), the result of saline influence; further into swamp-forests, the product of superabundance of fresh-water and heavy inundations during rains. Then come the tropical forests, which are more regulated by moisture and amount of shade than by substratum, although great differences (not so much habitually as specifically) are observable in those that grow on permeable or on half-permeable strata, on silicious sandstones or on metamorphic or permeable laterites, the latter rich in purely Malayan types, the former poorest of all (with those growing on limestone in Tenasserim I am not acquainted). The last sort of evergreen forests are the hill-forests, rather confusedly huddled together by me, but sufficiently distinguished for present requirements. The lower damper ones of these are a modification of the tropical forests below them, while the drier ones consist chiefly of pines, oaks, *Eri-cineæ*, etc., and pass soon into the temperate forests, which contain a great number of winter-deciduous trees but are not represented in Burma except on a few peaks above 6500-7000 feet elevation. Here the slope and resultant amount of light and moisture, and not so much the quality of rock, are the principal regulators, at least so it is on the metamorphic and older formation, while limestone, etc., will form exceptions. Higher up the in-



fluence of elevation modifies and changes vegetation according to well-known laws.

The leaf-shedding or deciduous forests form the other large class of Indian forests, and cover in these regions a greater area than the former. These grow either on impermeable strata, such as compact calcareous sandstones, and form then the "dry forests," where catechu trees and several Hindustani trees and arboreal *Euphorbias* find their home, while higher up on the crests of the Yomah they become formed almost exclusively of an arboreal *Hiptage*, often accompanied by several rather temperate forms like *Heracleum*, *Vaccinium*, *Hymenopogon*, etc. On laterite and gravelly strata, and also on very stiff plastic clay, grows another variety of forest, called by me the open forests. Those growing on the first named strata are especially interesting and are generally known to the Burmans as the eng or ein-forests, so named after the prevailing tree, *Dipterocarpus tuberculatus*; here the botanical rarities of Burma are scattered, and catch the eye the more readily that the surrounding forest is open and the soil-clothing rather scanty; higher up in the hill-eng forests, (which grow on laterite formed by decomposition of older rocks or on debris of them) the eng-tree is often replaced by other kinds of wood-oil trees (chiefly *Dipterocarpus costatus* and *obtusifolius*); while those open forests that occupy the stiff clay at the base of the hills are characterized by the absence of eng.

The last variety of deciduous forests are the mixed forests (as they are called by the forester), in which teak is chiefly found almost always accompanied by pyenkadu (*Xylia*). The upper ones grow either on permeable siliceous argillaceous sandstone, as is the case on the Pegu Yomah, and the trees are then usually very lofty, or on metamorphic and other older strata in Martaban, and in this case they are richer in species but lower in growth, often accompanied by trees which are very rare in the Yomah, such as *Pterocarpus*, *Ternstroemiaceae*, etc. The lower mixed forests occupy the alluvial lands of the greater rivers and gradually pass into the savannah-forests and the true savannahs. Along the larger choungs in the hills where alluvial deposits spread out to a larger extent, similar savannah-forests recur on a smaller scale, but much better grown, and, especially by favourable exposure, much mixed up with trees that are missed in the plains, such as *Erythrina lithosperma*, *Bischofia Javanica*, etc.

Such is a bird's-eye view of the Burmese forests, of which I have given a more detailed description in my report on the Pegu-forests, and I hope that these cursory notes may in the mean time aid in the understanding of the habitats of the species given in the following pages.

The area comprised by me under the general denomination of Burma is not the political one but includes Ava, Chittagong as far as the Fenny



river, Arracan, Pegu, Martaban (all the country between the Sittang and Salween is thus named by me), Tenasserim and the Andaman islands.

The collections which were at my disposal when working up the Burmese plants are as follows :

1. The large collections of Dr. Wallich and Dr. Brandis. Many of Wallich's Numbers are not contained in the Herbarium of the Botanical Gardens Calcutta, of others only fragments. The latter often proved very useful in the identification of plants collected by myself or others, but were only too often unfit for description in the absence of corresponding specimens collected by others. I experienced therefore much difficulty in dealing with such, especially as the greater part of Wallich's plants are not included in the earlier parts of DeCandolle's *Prodromus*, etc.

2. Drs. Griffith's and Helfer's sets of Burmese plants sent out from Kew. Of the former's collection a set retained by Dr. McClelland to aid in the editing of Griffith's posthumous papers, is still in the Herbarium here and served partially to supplement the incompleteness of the material.

3. Dr. Falconer's Tenasserim collections in the Calcutta herbarium.

4. Mr. Robert Scott's, the Rev. C. Parish's and Rev. Dr. F. Mason's plants, in the Calcutta herbarium, which, especially those of the latter two gentlemen, abound in novelties.

5. Drs. Hooker's and Thomson's Chittagong plants, and also a few plants of the same regions collected by Mr. C. B. Clarke. Only a small collection was made by myself during a very brief stay in 1869.

6. Dr. John Anderson's collections. Of these only the Burmese plants and those collected in the Kakhyen Hills are included here.

7. The collections I myself made in 1867-68, and again in 1870-71, all over Pegu, Prome and part of Martaban.

8. Arracan-plants, chiefly collected by myself and Dr. Schlich. A small collection by Captain Margrave from the same province is contained in the Calcutta herbarium.

9. Dr. Stoliczka and Mr. Theobald, of the Geological Survey of India, both presented to me small collections of Tenasserim plants, containing several new or interesting forms. To this must be added a collection of grasses and other plants, collected in the Prome district by Mr. Eug. Oates, C. E., and a few plants which Mrs. Mason brought home from the Red Karen country.

10. Smaller collections and single plants from various parts of Burma are contained in the Calcutta herbarium, collected by Mrs. Burney, Col. Eyre, Th. Lobb, Dr. McClelland, Belanger, Reynoud, Dr. Cleghorn, O'Riley, Th. Phillippi and others.

11. Dr. Roxburgh's *Flora* contains numerous contributions to the



Burmese Flora and some of them are still under cultivation in the Botanical garden here.

12. The collections made by myself in 1866 on the Andamans. Dr. Helfer's collections from the same islands were unfortunately mixed up with his Tenasserim plants. In order to avoid as much as possible the introduction of such doubtful stations, I have preferred to look upon such plants invariably as derived from Tenasserim or from the Andamans respectively, in all cases where specimens of the one or other regions already existed in the herbarium here.

13. A collection of plants made by the garden-collectors on various islands of the Andaman and Nicobar islands during Mr. A. O. Hume's ornithological cruise in 1873.

## I. DICOTYLEDONS.

### RANUNCULACEÆ.

#### *Conspectus of genera.*

I. *CLEMATIDÆ*. Sepals valvate. Carpels indehiscent, with a solitary ovule or seed in each. Leaves opposite. Usually woody climbers.

1. *CLEMATIS*. No petals, or if any, these gradually pass into stamens. Leaves without tendrils.

2. *NARAVELIA*. Petals terete, abruptly divided from the stamens. Leaves 2-foliolate.

II. *RANUNCULÆ*. Sepals imbricate. Carpels with a solitary ascending ovule or seed in each. Achenes indehiscent. Herbs or perennials.

3. *RANUNCULUS*. Sepals deciduous. Petals 3 or more.

III. *HELLEBOREÆ*. Sepals imbricate. Petals small, deformed, or sometimes none. Carpels many-seeded, dehiscent. Usually herbs.

4. *NIGELLA*. Petals small, or clawed, never spurred. Carpels more or less connate.

#### *Clematis*, L.

#### *Conspectus of species.*

*Sect. 1 Viticella*: Achenes simply beaked, without plumose tails. ... *C. bracteata*.

*Sect. 2 Flammula*: Achenes terminating in a plumose tail.

Leaves simple, ..... *C. smilacifolia*.

Leaves divided.

Anthers terminating in a subulate appendage, ..... *C. hedysarifolia*.

Anthers blunt, retuse or acute.

× Filaments glabrous.

Leaflets serrate, glabrous, shining; flowers small, ..... *C. Gouriana*.

Leaflets entire, tomentose; flowers small, ..... *C. subumbellata*.

× × Filaments hairy (at least towards the base).

Leaflets shining, glabrous; flowers small, ..... *C. acuminata*.

Leaflets tomentose or pubescent; flowers large, ..... *C. Buchananiana*.

I. *C. BRACTEATA* (*Thalictrum bracteatum*, Roxb., Fl. Ind., II, 671; *C. Cadmia*, Ham. ap. Hf. Fl. Ind. I, 5.)



HAB. Ava, Bhamo. Fl. Jan.

2. *C. SMILACIFOLIA*, Wall. in Asiat. Res., XIII, 414; Hf. Ind. Fl. I. 3; Bot. Mag. t. 4259.—(*C. subpeltata*, Wall. Pl. Asiat. rar. t. 20; *C. Munroana*, Wight Ill. t. 1; *C. inversa*, Griff. Not. Dicot. 700 t. 645, f. 7?)

HAB. Ava, on Taong-dong; Tenasserim, Mergui.

3. *C. HEDYSARIFOLIA*, DC. Syst. I, 148; Hf. Ind. Fl. I. 4.

HAB. Pegu (Hore).

4. *C. GOURIANA*, Roxb. Fl. Ind. II. 670; Wight Ic. t. 933 and 934; Hf. Ind. Fl. I. 4.

HAB. Ava, on Taong-dong. (Wall.) ; Tenasserim, (C. Parish).

5. *C. SUBUMBELLATA*, Kurz in Journ. As. Soc. Bengal, XXXIX, 61.—(*C. floribunda*, Kurz in Seem. Journ. Bot. V. 540, non Pl. et Trian).

HAB. Martaban, Karen hills (O'Riley).

6. *C. ACUMINATA*, DC. Syst. I. 148; Hf. Ind. Fl. I. 5.

HAB. Martaban, in the damp hill-forests E. of Toungoo, at 3000 to 4000 ft. elevation. Fr. March.

7. *C. BUCHANANIANA*, DC. Syst. I. 140; Hf. Ind. Fl. I. 6. var. *rugosa*, Hf. and Th. l. c.

HAB. Martaban, Karen hills (Rev. F. Mason, O'Riley).

#### *Doubtful species.*

1. *C. GROSSA*, Wall. Cat. 4671; Hf. and Th. Fl. Ind. I. 12.—Ava. Tong-dong (Wall.)

#### **Naravelia, DC.**

##### *Conspectus of species.*

Leaflets tomentose or pubescent beneath,..... *N. Zeylanica*.  
Leaflets quite glabrous, ..... *N. laurifolia*.

1. *N. ZEYLANICA*, DC. Syst. I. 167; Hf. Ind. Fl. I. 7.—(*Atragene Zeylanica*, L. Amoen, I. 405; Roxb. Corom. Pl. II. t. 188, and Fl. Ind. II. 670; *N. dasyoneura*, Korth. in Ned. Kruidk. Arch. I. 208; Miq. Fl. Ind. I/2. 2).

HAB. Frequent in the mixed and dry forests all over Pegu and Prome; also in Ava. Fl. H. S. Fr. C. S.

2. *N. LAURIFOLIA*, Wall. Cat. 4685; Hf. Ind. Fl. I. 7.

HAB. Not unfrequent in the tropical forests of Martaban; also Tenasserim, Mergui (Griff.) Fl. Fr. Febr. March.

#### **Ranunculus, L.**

##### *Conspectus of species.*

A spreading creeping pubescent perennial, ..... *R. diffusus*.  
An erect glabrous somewhat succulent annual, ..... *R. sceleratus*.



1. *R. DIFFUSUS*, DC. Prod. I. 38 ; Hf. Ind. Fl. I. 19. (*R. subpinna-tus* W. A. ; Wight Jc. t. 49 ; *R. vestitus*, Wall. Cat. 4707).

HAB. Ava, Taong dong (Wall.), Khakyen hills, E. of Bhamo (J. Anderson). Fl. Fr. March.

2. *R. SCELERATUS*, L. sp. pl. 776 ; Engl. Bot. t. 681 ; Hf. Ind. Fl. I. 19. (*R. Indicus*, Roxb. Fl. Ind. II. 671).

HAB. On moist mud-banks of the Irrawaddi from Prome District down to Pegu (at Henzadah.) Fl. Fr. Febr.-Apr.

### Nigella, L.

\* *NIGELLA SATIVA*, L. sp. pl. 753 ; DC. Prod. I. 49 ; Walp. Rep. II. 742. var. *INDICA*, DC. l. c. (*N. Indica*, Roxb. Fl. Ind. II. 646).

HAB. Burmah, cult. according to Dr. Mason (never seen by me).

## DILLENIACEÆ.

### Conspectus of genera.

1. *DELIMEÆ*. Filaments more or less dilated at apex ; anthers short, the cells diverging, or rarely parallel. Woody climbers.

1. *DELIMA*. Carpels solitary : ovules 2-3, basilar.

2. *TETRACERA*. Carpels 3-5, ovules many, in 2 series.

II. *DILLENIEÆ*. Filaments equal ; anther-cells parallel. Trees or herbs.

3. *DILLENIA*. Carpels 5-20. Seeds without arillus. Trees.

4. *ACROTREMA*. Carpels 3. Stemless herbs with radical leaves.

### Delima, L.

1. *D. SARMENTOSA*, L. sp. pl. 736 ; Bot. Mag. t. 3058 ; Hf. Ind. Fl. I. 31.—(*Tetracera sarmentosa*, Vahl Symb. III. 70, Roxb. Fl. Ind. II. 645). Var. *HEBECARPA*, Hf. and Th. Fl. Ind. I. 61.

HAB. Not unfrequent in the mixed forests all over Burma, from Chittagong and Ava down to Aracan and the Andamans.

### Tetracera, L.

1. *T. ASSA*, DC. Syst. I. 402 ; Hf. Ind. Fl. I. 31. (*T. trigyna*, Roxb. Fl. Ind. II. 645).

HAB. Chittagong (Hf. and Th.).

Another species with large leaves of a thin texture, when fullgrown quite glabrous, is not unfrequent in the swamp-forests of the Irrawaddi alluvium in Pegu. It is no doubt a new species but, unfortunately, I could obtain neither flowers nor fruits.

### Acrotrema, Jack.

1. *A. COSTATUM*, Jack in Mal. Misc. ex Hook. Bot. Misc. II. 82 ; Hf. Ind. Fl. I. 32. (*A. Wightianum*, WA ; Wight Jc. t. 9).

HAB. Tenasserim, Moulmein.



**Dillenia, L.***Conspectus of species.*

*Sect. 1. Eudillenia.* Petals white. Seeds with hairy borders, flowers very large, *D. Indica*.

*Sect. 2. Colbertia.* Seeds smooth. Flowers yellow.

\* Calyx tomentose or pubescent.

O Flowers very large (petals about 2 in. long).

Peduncles  $1\frac{1}{2}$  to 2 in. long, straight; styles 12; petioles about 1 in. long. *D. pulcherrima*.

Peduncles 4-8 lin. long, thick and nodding; styles 10; petioles up to  $\frac{1}{2}$  in. long, *D. aurea*.

Peduncles very long and slender; styles 6; petioles only 2 to 1 lin. long, ..... *D. pilosa*.

O O Flowers small (petals less than an in. long).

Peduncles 1 or 2-bracted, like the calyx densely tomentose; styles 5-7, ... *D. parviflora*.

\* \* Calyx and peduncles perfectly smooth or pruinous. Flowers small.

Peduncles bracted, ..... *D. scabrella*.

Peduncles without bracts, ..... *D. pentagyna*.

1. *D. INDICA*, L. sp. pl. 745; Hf. Ind. Fl. I. 200. (*D. speciosa*, Thbg. in Linn. Trans. I. 200; Wight Jc. t. 823; Roxb. Fl. Ind. II. 650; Bot. Mag. t. 5016; *D. elongata*, Miq. Suppl. Fl. Sumatr ...)

HAB. Not unfrequent along choungs in moister upper mixed forests of the Pegu Yomah on sandstone; also in Martaban, Tenasserim and Chittagong, on metamorphic rocks. Fl. Fr. Febr. March.

2. *D. AUREA*, Sm. Exot. Bot. II. t. 92 93?; Ham. in Linn. Trans. xv. 101. *D. ornata*, Wall. Pl. As. rar. I, 20, t. 23; *D. speciosa*, Griff. Not. Dicot. 703, t. 649, f. 3.).

HAB. Frequent in the drier hill-forests of Martaban and entering the pine-forests up to 4000' ft. elevation; also in tropical forests of Tenasserim, up to 3000 ft. elevation. Fl. March, Apr.

3. *D. PULCHERRIMA*, Kurz in Journ. As. Soc. Bengal, 1871, 46; Hf. Ind. Fl. I. 37.

HAB. Common in the open forests, chiefly in the Eng-forests of Pegu and Martaban. Fl. H. S.; Fr. Begin of R. S.

4. *D. PARVIFLORA*, Griff. Not. Diot. 70; Hf. Ind. Fl. I. 38.

HAB. Frequent in the mixed forests of Pegu, Martaban and Tenasserim Fl. H. S.; Fr. Begin of R. S.

5. *D. PILOSA*, Roxb. Fl. Ind. II. 652, non Ham.; Kurz in Journ. As. Soc. Bengal 1872, 292.

HAB. Frequent in the upper mixed forests of the Andamans. Fl. H. S.; Fr. Begin of R. S.

6. *D. SCABRELLA*, Roxb. Fl. Ind. II. 643; Wall. Pl. as. rar. I. 20, t. 22; Hf. Ind. Fl. I. 38.

HAB. Chittagong (Roxb.). Fl. H. S., Fr. Begin of R. S.

7. *D. PENTAGYNA*, Roxb. Corom. Pl. I, t. 20, and Fl. Ind. II. 652; Hf. Ind. Fl. I. 38. Var.  $\beta$ . *AUGUSTA* (*D. augusta*, Roxb. Fl. Ind. II. 652; *D. floribunda*, Hf. and Th. Fl. Ind. I. 71).





HAB. Frequent in the mixed forests, especially the upper ones of Pegu and Martaban down to Tenasserim. Fl. H. S. ; Fr. Begin of R. S.

The smaller leaved and longer petioled var. *a.*, frequent in India, seems not to occur in Burmah.

### MAGNOLIACEÆ.

#### *Conspectus of genera.*

- I. *WINTEREÆ*. Stipules none. Perianth double. Carpels in a single whorl.
1. *ILICIIUM*. Only genus. Trees or shrubs.
- II. *MAGNOLIEÆ*. Stipules conspicuous, convolute and sheathing the young foliage, deciduous.
  - \* Ovary sessile.
  - 2. *TALAUMA*. Carpels of fruit indehiscent, deciduous.
  - 3. *MAGNOLIA*. Carpels of fruit dorsally dehiscent. Ovules 2.
  - 4. *MANGLIETIA*. Carpels of fruit dorsally dehiscent. Ovules 6 or more.
  - \* \* Ovary stalked.
  - 5. *MICHELIA*. Only genus.

#### *Illicium*. L.

1. *J. MAJUS*, Hf. et Th. Ind. Fl. I. 40.

HAB. Tenasserim, Thounnggyeen range, at 5500 ft. elevation (Lobb).

#### *Talauma*, Juss.

##### *Conspectus of species.*

Leaves glabrous ; fruits 4-6 in. long,..... *T. liliifera*.  
 Leaves usually pilose or downy beneath ; fruits 2 in. long,..... *T. Candollei*.

1. *T. LILIIFERA*, (*Liriodendron liliiflora*, Roxb. Fl. Ind. II. 654 ; *T. Rabaniana*, Hf. and Th. Fl. Ind. I. 75, and Ind. Fl. I. 40).

HAB. Tenasserim, Mergui (Griff.). (According to Hf. and Th. first ed. of Fl. Ind.)

2. *T. CANDOLLEI*, Bl. Verh. Bat. Genotsch. I. 147 ; Miq. Fl. Ind. Bat. I/2 14. *T. mutabilis*, Bl. Fl. Jav. Magnol. 35, t. 10-12 B. ; Hf. Ind. Fl. I. 40).

HAB. Tenasserim, Moulmein (Lobb).

#### *Magnolia*, L.

1. *M. SPHENOCARPA*, Roxb. Corom. Pl III. t. 266 ; Hf. Ind. Fl. I. 41. (*Liriodendron grandiflorum*, Roxb. Fl. Ind. II. 65).

HAB. Chittagong ; Pegu (Brandis).

#### *Manglietia*, Bl.

1. *M. INSIGNIS*, Bl. Fl. Jav. Magnol. 23 ; Hf. Ind. Fl. I. 42. (*Magnolia insignis*, Wall. Tent. Fl. Nap. t. 1, and Pl. as. rar. II. t. 182).

HAB. Pegu (Brandis).



**Michelia, L.**

1. *M. CHAMPACA*, L. sp. pl. 756; Roxb. Fl. Ind. II. 656; Bl. Fl. Jav. Magn. 9, t. 1; Griff. Not. Dicot. 715; Hf. Ind. Fl.-I, 42. (*Michelia aurantiaca*, Wall. Pl. as. rar. II. t. 147).

HAB. Rather rare in the tropical forests of Martaban and Tenasserim also Pegu, above Rangoon (on laterite); Ava, Bhamo; Prome hills (Wall.). Fl. Fr. R. S.

**ANONACEÆ.***Conspectus of genera.*

I. *UVARIEÆ*. Petals in 2 rows, one or both rows imbricate in the bud. Stamens many, closely packed.

1. *BOCAGEA*. Sepals small, imbricated in the bud. Torus flat. Carpels 3 to 6.

2. *UVARIA*. Sepals valvate. Flowers bisexual; ovules 1 or 2 or many; torus almost flat. Climbers.

II. *UNONIEÆ*. Petals valvate in the bud, more or less spreading, somewhat unequal, or those of the inner row small or wanting, not or little narrowed at base.

\* Petals spreading from the base.

× Ovules many, ventral.

3. *ALPHONSEA*. Petals nearly equal. Stamens 6 or more, loosely imbricated, with dorsal anthers.

4. *CANANGA*. Petals open, elongate. Stamens indefinite, closely packed, ovate-acute at the top. Ovules in 2 rows.

5. *CYATHOSTEMMA*. Petals broad-ovate. Stamens indefinite, the connective obliquely incurved. Ovules many, in 2 rows.

6. *UNONA*. Petals open, usually elongated. Stamens indefinite closely packed, capitate or truncate at the top. Ovules in a single row. Ripe carpels usually moniliform.

× × Ovules 1 or 2, erect.

7. *POLYALTHIA*. Petals opened, rather thick. Berries indehiscent.

8. *ANAXAGOREA*. Petals opened, rather thick. Carpels follicle-like, dehiscent.

\* \* Petals enclosing the sexual organs with a concave or connivent base, free towards the summit.

9. *CYATHOCALYX*. Calyx 3-toothed. Petals connivent at base. Carpels solitary. Ovules many.

III. *XYLOPIEÆ*. Petals valvate, connivent or hardly open, those of the outer row usually thick, not narrowed at base, and enclosing the 3 inner, smaller or minute ones, or the latter wanting.

\* Ovules solitary.

10. *ANONA*. Outer petals concave, often broad. Berries united into a many-celled syncarp.

\* \* Ovules 2 or more.

11. *XYLOPIA*. Petals triquetrous, connivent, narrowed. Anthers truncate. Torus hollow. Stigmas elongate.

12. *ARTABOTRYS*. Petals terete, triquetrous or flat, concave at the base and enclosing the sexual organs, the tips spreading. Anthers truncate. Torus hollow. Peduncles usually hooked.





*Trib. IV. MITREPHOREÆ.* Petals valvate, the outer ones open, the inner ones erect, connivent or connate at their tips and often claw-like narrowed at the base.

\* Petals of the inner row shorter or equally long.

× Petals not narrowed at the base, or the claw-like base broad.

13. *OXYMITRA.* Inner petals connivent, not or almost not narrowed at base. Ovules 2, erect. Seeds not angular.

14. *GONIOTHALAMUS.* Inner petals connivent, narrowed in a broad claw. Ovules 2, erect.

15. *MELODORUM.* Petals thick coriaceous, the inner ones shorter, triquetrous at summit and hollowed at base on the inner side.

× × Petals narrowed into curved not angular free slender claws, the laminae cohering in a sort of mitre.

16. *MITREPHORA.* Stamens numerous. Ovules many, in 2 rows. Flowers usually rather conspicuous, sometimes dioecious.

17. *OROPHEA.* Stamens definite, 6, 9, or 12. Ovules 2-4. Flowers usually very small.

\* \* Sepals and the 3 outer petals usually conform or nearly so, minute, resembling a calyx. Inner petals large, erect-connivent, often saccate or concave at base.

18. *PHÆANTHUS.* Inner petals flat, rather thick. Ovules 1 or 2. Anther-cells concealed by the overlapping connectives.

19. *MILIUSA.* Inner petals flat. Ovules 2 or more. Anther-cells not concealed.

### Bocagea, St. Hil.

1. *B. ELLIPTICA*, Hf. and Th. in Ind. Fl. I. 92.

HAB. Tenasserim, Tavoy (Wall.).

### Uvaria, L.

#### *Conspectus of species.*

*Subg. 1. Ellipseia.* Ovules solitary or by pairs. Usually erect shrubs.

A little erect shrub; berries elliptical or nearly so, very small, glabrous, sessile, *U. ferruginea*.

*Subg. 2. Eu-uvaria.* Ovules usually numerous, rarely few. Climbing shrubs.

§ Flowers large or middling sized, the connective terminating in a large almost leafy appendage.

O Carpels on long stalks.

Flowers solitary; carpels and all other parts shortly tomentose, ..... *U. purpurea*.

All parts hirsute; usually solitary; carpels tawny hirsute, ..... *U. hirsuta*.

Flowers by 2 or 3 on a peduncle; carpels tubercled and stellately hispid-tomentose; all parts puberulous, ..... *U. ptychocalyx*.

O O Carpels sessile or very shortly stalked.

Peduncles 3-to 6-flowered; carpels glabrous, ..... *U. macrophylla*.

Peduncles 1-to 2-flowered; carpels tomentose, ..... *U. bracteata*.

§ § Flowers minute. Stamens truncate, the connective hardly produced beyond the anther-cells.

Berries on long slender stalks, glabrous, ..... *U. micrantha*.

1. *U. FERRUGINEA*, Ham. ap. Hf. and Th. Fl. Ind. I. 96. (*Ellipseia ferruginea*, Hf. and Th. Ind. Fl. I, 52.)



HAB. Not uncommon in the Eng forests of Prome and Pegu, on laterite; also Tenasserim, Thoungyeen (Dr. Brandis). Fl. Apr.; Fr. Jan. Febr.

In this species the ovules vary in number (1 or 2). Hooker gives *Uv. dulcis*, Dun., as a Burmese plant, but I suspect it is referable to this species.

2. *U. PURPUREA*, Bl. Bydr. 11 and Fl. Jav. Anon. 13, t. 1 and 13 f. A; Hf. Ind. Fl. I. 47. (*Uvaria grandiflora* Roxb. Fl. Ind. II. 665, Wall. Pl. As. rar. III. t. 121).

HAB. Not uncommon in the tropical forests of Martaban; also Tenasserim.

3. *U. HIRSUTA*, Jack Mal. Misc.; Bl. Fl. Jav. Anon. 22, t. 5; Hf. Ind. Fl. I. 48. (*U. pilosa*, Roxb. Fl. Ind. II. 665; *U. trichomalla*, Bl. l. c. 42, t. 18).

HAB. Rare in the tropical forests of the E. slopes of the Pegu Yoma (Khaboung, Choungmenah valley).

I have only leaf-branches, but I can hardly be mistaken in identifying my specimens with Jack's Malayan species.

4. *U. PTYCHOCALYX*, Miq. Ann. Mus. Lugd. Bat. II. 4; Hf. Ind. Fl. I. 49.

HAB. Not uncommon in tropical forests of the southern slopes of the Pegu Yomah; Tenasserim, Moulmein (Theobald). Fr. Dec. Jan.

5. *U. MACROPHYLLA*, Roxb. Fl. Ind. II. 663; Wall. Pl. As. rar. II. t. 122; Hf. Ind. Fl. I. 49 pp.; Bedd. Icon. Pl. Ind. or. t. 81.

HAB. Frequent in the mixed forests all over Burma from Chittagong and Ava down to Tenasserim. Fl. R. S.; Fr. Nov. Dec.

6. *U. BRACTEATA*, Roxb. Fl. Ind. II. 660; Hf. Ind. Fl. I. 49.

HAB. Tenasserim (Wall.) Fl. May; Fr. Sept.

7. *U. MICRANTHA*, Hf. and Th. Fl. Ind. I. 103 and Ind. Fl. I. 51. (*U. Sumatrana*, Kurz And. Rep. App. B. 1; Hf. Ind. Fl. I. 51).

HAB. Rather frequent in tropical forests of the Andamans; also Pegu (Brandis) and Upper-Tenasserim (Falconer). Fl. June.

### Alphonsea, Hf. and Th.

#### Conspectus of species.

The stalk nearly as long as the carpel,...	...	...	... <i>A. ventricosa</i> .
The stalk of the carpels very short, ...	...	...	... <i>A. lutea</i> .

1. *A. VENTRICOSA*, Hf. and Th. Fl. Ind. I. 152 and Ind. Fl. I. 89. (*Uvaria ventricosa*, Roxb. Fl. Ind. II. 658).

HAB. In the forests of Chittagong; Andamans.

2. *A. LUTEA*, Hf. and Th. Fl. Ind. I. 153, and Ind. Fl. I. 89 Bedd.





Jc. Pl. Ind. or. t. 91. (*Ucaria lutea*, Roxb. Corom. Pl. I. t. 36 and Fl. Ind. II. 666).

HAB. Ava, Segain (Wall.) ; Pegu (teste Hf. and Th.).

### Cananga, Rumph.

1. C. ODORATA, Hf. and Th. Fl. Ind. I. 130 and Ind. Fl. I. 56. (*Uvaria odorata*, Lam. Ill. t. 495, f. 1 ; Roxb. Fl. Ind. II. 661 ; Griff. Not. Dicot. 712 ; *Uvaria axillaris*, Roxb. l. c. 667).

HAB. Ava (Wall. cult. ?) ; Tenasserim, apparently frequent.

### Cyathostemma, Griff.

1. C. VIRIDIFLORUM, Griff. Not. Dicot. 707, Ic. t. 650 ; Hf. Ind. Fl. I. 57.

HAB. South Andaman, in the tropical forests north of Port Mouat.

This species is inserted here on the authority of Hf. and Th.

### Unona, L.

#### Conspectus of species.

Sect. 1. *Desmos*. Petals 6. Berries necklace-like constricted between the seeds.

× Petals glabrous.

Leaves glabrous, pale coloured beneath ; peduncles only  $\frac{1}{2}$  to  $1\frac{1}{2}$  in. long, axillary and occasionally terminal, ... .. *U. Dunalii*.

× × Petals appressed pubescent or puberulous.

Leaves glabrous beneath ; peduncle 1-2 in. long ; petals 2 in. by 1 in. ... *U. discolor*.

Leaves glaucous and usually pubescent beneath ; peduncle 4-8 in. long ; petals  $2\frac{1}{2}$  by 1 in., ... .. *U. desmos*.

Leaves while young greyish tomentose ; peduncle 4 to 8 lin. long ; petals  $1-1\frac{1}{2}$  in. long, oblong, ... .. *U. latifolia*.

Leaves pale coloured and pubescent beneath along the nerves ; peduncle  $\frac{1}{2}-\frac{1}{2}$  in. long ; petals 2 to 3 in. long, very narrow linear, ... .. *U. stenopetala*.

Sect. 2. *Dasymaschalon*. Outer petals 3, large, the 3 inner ones quite suppressed.

Petioles rather long ; petals 4 to 6 in. long, ... .. *U. longiflora*.

Leaves almost sessile, cordate at base ; petals nearly 3 in. long, ... *U. dasymaschala*.

1. U. DUNALII, Wall. ap. Hf. and Th. Fl. Ind. I. 131, and Ind. Fl. I. 53.

HAB. Forests of Chittagong on the Seetakoond hill (Hf. and Th.).

2. U. DISCOLOR, Vahl. Symb. II. 63, t. 36 ; Roxb. Fl. Ind. II. 669 ; Hf. Ind. Fl. I. 59 ; Bedd. Icon. Pl. Ind. or. t. 51.

Var.  $\alpha$ . PUBIFLORA, Hf. and Th. l. c.

Var.  $\beta$ . PUBESCENS, Hf. and Th. l. c.

Var.  $\gamma$ . LATIFOLIA, Hf. and Th. l. c.

HAB. Tropical forests and moister upper mixed forests from Chittagong and Ava down to Tenasserim. Fr. Jan.

3. U. DESMOS, Dun. Anon. 112 ; Hf. Ind. Fl. I. 52.



HAB. Frequent in tropical and low forests all over Pegu and Martaban ; also Tenasserim. Fl. June ; Fr. October.

It is difficult to distinguish some states of this species from the former, for the peduncles vary very much in length, as do also the petals with regard to size and shape.

4. *U. LATIFOLIA*, Hf. and Th. Ind. Fl. I. 60.

HAB. Martaban, in dry hill-forests on limestone rocks along the Nga-choung of the Salween (Brandis). Fl. May.

5. *U. STENOPETALA*, Hf. and Th. Fl. Ind. I. 163, and Ind. Fl. I. 60.

HAB. Tenasserim, Moulmein (Lobb).

6. *U. LONGIFLORA*, Roxb. Fl. Ind. II. 668 ; Hf. Ind. Fl. I. 61.

HAB. Chittagong.

7. *U. DASYMASCHALA*, Bl. Fl. Jav. Avon. 55. t. 27 ; Hf. and Th. Fl. Ind. I. 135, and Ind. Fl. I. 61. (*Pelticalyx argentea*, Griff. Not. Dicot. 706?).

Var.  $\alpha$ . *BLUMEI*, Hf. and Th. l. c.

Var.  $\beta$ . *WALLICHII*, Hf. and Th. l. c. (*U. coelophloea*, Scheff. Obs. phyt. 6?).

HAB. Frequent in the tropical forests of Martaban and Tenasserim to the Andamans ; also Ava. Fl. Febr. to May.

### **Polyalthia, Bl.**

#### *Conspectus of species.*

*Sect. 1. Monoon*, Miq. Fl. hermaphrodite. Petals flat. Ovules solitary, erect.

§ Flowers usually rather large ; carpels oblong or elongate and cylindrical.

× Petals linear to linear-lanceolate or spatulate-linear.

Leaves glabrous, one-coloured, apiculate or shortly acuminate ; carpels obversely ovoid, ... *P. lateriflora*.

Leaves glabrous, glaucous or whitish beneath, shortly acuminate, ... *P. Sumatrana*,  
× × Petals ovate to ovate-lanceolate and elliptical.

Carpels almost globular, glabrous ?, leaves glabrous, ... *P. nitida*.

Carpels velvety ; leaves along the nerves beneath puberulous, ... *P. membranacea*.

Carpels elongate-oblong, glabrous ; leaves along the nerves pubescent, ... *P. Jenkinsii*.

§ § Flowers small, on slender pedicels ; carpels globular, pea-shaped.

Leaves along the nerves beneath pubescent, blunt or nearly so ... *P. suberosa*.

Leaves pubescent beneath, acuminate, ... *P. cerasoides*.

*Sect. 2. Eupolyalthia*. Flowers hermaphrodite. Petals flat. Ovules 2, superposed, ascending.

Flowers small, sessile or nearly so, sometimes clustered, ... *P. dubia*.

1. *P. LATERIFLORA*, (*Guatteria lateriflora*, Bl. Bydr. 20 and Fl. Jav. Anon. 100, t. 50 and 52 D. ; *Guatteria spathulata*, T. et B. in Tydschr. Nat. Ver. Ned. Ind. XXIV, petalis latioribus ; *P. simiarum*, Bth. and Hf. Ind. Fl. I. 63.)



HAB. Not uncommon in the tropical forests of the eastern slopes of the Pegu Yomah and Martaban; also Tenasserim. Fr. May, June.

2. *P. SUMATRANA* (*Guatteria Sumatrana*, Miq. Suppl. Fl. Sumatr. 380; *Monoon Sumatranum*, Miq. in Ann. Mus. Lugd. Bat II. 19).

HAB. Tenasserim (or Andamans?) (Helf.).

3. *P. NITIDA*, Bth. and Hf. Ind. Fl. I. 64. (*Guatteria nitida*, A. DC. Mem. Anon. 41.

HAB. Tenasserim, Tavoy (Wall.).

*Guatteria membranacea*, A. DC. Mem. Anon. 41. Hf. Ind. Fl. I. 68. is hardly different from the above.

4. *P. JENKINSII*, Bth. and Hf. Ind. Fl. I. 64. (*Guatteria Jenkinsii*, Hf. and Th. Fl. Ind. I. 141; *P. Andamanica*, Kurz and And. Rep. 2 ed. 29).

HAB. Frequent in the tropical forests of South Andaman and the adjacent islands. Fl. begin of R. S.

5. *P. SUBEROSA*, Bth. and Hf. Ind. Fl. I. 65; Bedd. Icon. Pl. Ind. or. t. 56. (*Uvaria suberosa*, Roxb. Corom. Pl. I. t. 34 and Fl. Ind. II. 667).

HAB. Tenasserim. Fr. Febr.

6. *P. CERASOIDES*, Bth. and Hf. Ind. Fl. I. 63. (*Uvaria cerasoides* Roxb. Corom. Pl. I. t. 33, and Fl. Ind. II. 666; *Guatteria cerasoides*, Dun. Mem. Anon. 28; *P. bifaria*, Bth. and Hf. Ind. Fl. I. 62).

HAB. Prome (Wall.) Fr. Sept. Oct.

Wallich's specimens in HBC. are in fruit, and, therefore, it is very improbable that the flowers (which appear during H. S.) should belong to the same specimens in Kew Herb. referred to *P. bifaria*.

7. *P. ? DUBIA*, Kurz in And. Rep. 2nd ed. 29 (*P. macrophylla*, Hf. and Th. Ind. Fl. I. 66, excl. syn.) var.  $\alpha$  GLABRIUSCULA, petals broader, leaves and branchlets glabrescent, var.  $\beta$ . FALCONERI, branchlets and leaves beneath pubescent, petals less imbricate in bud.

HAB. Var.  $\alpha$ . Frequent in the tropical forests on the Andamans; var.  $\beta$ . Moulmein (Falc. 545). Fl. May, June.

I have only male flowers, and the imbrication of the petals (especially in the Andaman plant) indicates a different genus. Hf. and Th. identify the plant with Blume's *Guatteria macrophylla* (= *Trivalvaria macrophylla*, Miq., *Guatteria brevipetala*, Miq.) which resembles especially the Andaman plant so much that I confounded it with it in my Andaman Report. This has, however, the inner petals thick and fleshy, narrowed at base and the broad triangular blades (see Bl. Fl. Jav. Anon. t. 52. B. f. 2.) connivent somewhat after the fashion of *Mitrephora*.

#### *Doubtful species.*

1. *P. COSTATA*, Hf. and Th. Ind. Fl. I. 67.

HAB. Tenasserim, along the Attaran river (Wall.)

Hf. and Th. refer this to the genus *Trivalvaria*, Miq.



**Anaxagorea, St. Hil.**

1. *A. LUZONENSIS*, A. Gray in Bot. U. S. Expl. Exp. 27 ; Hf. Ind. Fl. I. 68. (*A. Zeylanica*, Hf. and Th. Fl. Ind. I. 144 ; Bedd. Icon. Pl. Ind. or. t. 46.)

HAB. Not unfrequent in the tropical forests of Martaban and the southern slopes of the Pegu Yomah ; also on the Andamans. Fl. May, June ; Fr. Aug.

**Popowia, Endl.**

1. *P. HELFERI*, Hf. and Th. Ind. Fl. I. 69.

HAB. Tenasserim, King's island (Helfer).

**Cyathocalyx, Champ.**

1. *C. MARTABANICUS*, Hf. and Th. Ind. Fl. I. 53,

HAB. Not uncommon in the tropical forests of Martaban down to Tenasserim, rare in those of the eastern and southern slopes of the Pegu Yomah. Fr. March, Apr.

**Anona, L.***Conspectus of species.*

\* Fruits areolate.

Leaves usually blunt ; inner petals minute or almost none ; fruit with prominent convex areoles, ... .. *A. squamosa*.

Leaves acuminate, larger ; areoles of fruit not or hardly projecting, .. *A. reticulata*.

\* \* Fruits very large, muricate.

All parts glabrous. ... .. *A. muricata*.

1. *A. SQUAMOSA*, L. sp. pl. 757 ; Roxb. Fl. Ind. II. 657 ; Bot. Mag. t. 3095 ; Bl. Fl. Jav. Anon. 107. t. 53 B. ; Hf. Ind. Fl. I. 78.

HAB. Cultivated all over Burmah, more especially and on a large scale in the Prome district. Fl. March.

2. *A. RETICULATA*, L. sp. pl. 757 ; Roxb. Fl. Ind. II. 657 ; Bot. Mag. t. 2911 ; Hf. Ind. Fl. I. 78.

HAB. Not much cultivated in Burmese gardens.

3. *A. MURICATA*, L. sp. pl. 756 ; Miq. Fl. Ind. Bat. I-2. 34.

HAB. Cultivated in gardens of Tenasserim, especially the southern parts.

**Artabotrys, R. Br.***Conspectus of species.*

§ Blade of petals flattened.

× Petals oblong-lanceolate, usually narrowed at base, with the borders reflexed.

O Flowers arising from hooked peduncles.

Young parts rusty tomentose ; leaves firmly coriaceous, glabrous ; petals densely tawny tomentose ... .. *A. crassifolius*



Quite glabrous; leaves thin coriaceous; petals glabrous or puberulous...*A. odoratissimus*.

O O Flowers arising directly from the lateral branchlets, peduncle reduced or only indicated.

Small erect shrub, adult parts all glabrous, ... ..*A. Kurzii*.

× × Petals narrow, linear, elongate, ... ..*A. speciosus*.

§ § Petal-blade terete or triquetrous, fleshy, subulate or linear.

Petals triquetrous; branchlets and leaves beneath pubescent ... ..*A. Birmanicus*.

Petals terete; all parts glabrous .. ...*A. suaveolens*.

1. *A. CRASSIFOLIUS*, Hf. and Th. Ind. Fl. I. 54.

HAB. Martaban (Dr. Brandis).

2. *A. ODORATISSIMUS*, R. Br. in Bot. Reg. t. 423; Hf. Ind. Fl. I. 54. (*A. hamatus*, Bl. Fl. Jav. Anon. 60, t. 29 and 31, C; *Uvaria odoratissima* et *U. uncata*, Roxb. Fl. Ind. II. 666; *A. Blumei*, Hf. and Th. Fl. Ind. I. 128; *A. intermedius*, Hassk. Pl. Jav. rar. 173).

HAB. Tenasserim, banks of rivers, along the Attaran etc.; Ava, near Mandalay, probably cultivated. (Dr. J. Anderson.)

3. *A. KURZII*, Hf. and Th. Ind. Fl. I. 54.

HAB. Not unfrequent in the Eng forests of Pegu and Martaban, on laterite. Fl. Apr.

4. *A. SPECIOSUS*, Kurz in And. Rep. 1 ed. App. B. 1; Hf. Ind. Fl. I. 55.

HAB. In the tropical forests\* along Middle Straits, South Andaman. Fl. May.

5. *A. BURMANICUS*, A. DC. Mem. Anon. 36; Hf. Ind. Fl. I. 55. (*Rhopalopetalum uniflorum*, Griff. Not. Dicot. 717).

HAB. Not unfrequent in tropical forests of the eastern slopes of the Pegu Yomah; Tenasserim from Moulmein to Mergui; also Ava, on Taong dong (Wall.) Fl. Nov.; Fr. Febr.

6. *A. SUAVEOLENS*, Bl. Fl. Jav. Anon. 62, t. 30 and 31, D.; Hf. Ind. Fl. I. 55. (*Rhopalopetalum sp.* Griff. Not. Dicot. 716).

HAB. Chittagong (Hf. and Th.), Tenasserim, Mergui (Griff).

### *Oxymitra*, Bl.

#### *Conspectus of species.*

\* Sepals short, coriaceous, 2 to 3 lin. long.

Petals from a broad base narrowly linear, nearly 2 in. long, slightly pubescent *O. stenopetala*.

Petals oblong-lanceolate, blunt, very thick, tawny puberulous, ...*O. Macclellandii*.

Incompletely known. ... ..*O. unonafolia*.

\* \* Sepals as in *Goniiothalamus*, membranous and nerved, large about 7 to 8 lin. long.

Petals oblong-lanceolate, about 1½ in. long, acute, tawny pubescent, ...*O. fornicata*.

1. *O. STENOPETALA*, Hf. and Th. Ind. Fl. I. 71.

HAB. Tenasserim, Moulmein and Thoungyeen (Falc., Brandis). Fl. Apr.

2. *O. MACCLELLANDII*, Hf. and Th. Ind. Fl. I. 70.



HAB. Not unfrequent in the tropical and low forest of the southern slopes of the Pegu Yomah, chiefly on permeable laterite. Fl. May to June.

3. *O. FORNICATA*, Hf. and Th. Fl. Ind. I. 146 and Ind. Fl. I. 71. (*Uvaria fornicata*, Roxb. Fl. Ind. II. 662).

HAB. Not unfrequent in the tropical forests of South Andaman; Tenasserim, Mergui (Griff.). Fl. May.

*Doubtful species.*

1. *O. UNONÆFOLIA*, Hf. and Th. Fl. Ind. I. 146 and Ind. Fl. I. 71.

HAB. Tenasserim, Tavoy (Wallich).

**Goniiothalamus, Bl.**

*Conspectus of species.*

Flowers about 9 lin. long. ...	...	...	...	... <i>G. sesquipetalis</i> .
Flowers about 2 in. long ...	...	...	...	... <i>G. Griffithii</i> .

1. *G. SESQUIPEDALIS*, Hf. and Th. Fl. Ind. I. 108 and Ind. Fl. I. 73. (*Guatteria sesquipetalis*, Wall. Pl. As. rar. III. t. 266).

HAB. Tenasserim (teste Hf. and Th.).

2. *G. GRIFFITHII*, Hf. and Th. Fl. Ind. I. 110 and Ind. Fl. I. 73.

HAB. Rather rare in the tropical forests of the eastern slopes of the Pegu Yomah (headwaters of Swachoung); Martaban (Brandis); Tenasserim, Mergui (Griff.).

**Melodorum, Dun.**

*Conspectus of species.*

*Sect. 1. Pyramidanthe*, Miq. Calyx cyathiform, 3-lobed. Flowers large, 2-5 in. long.

Flowers 4-5 in. long, white; leaves membranous, quite glabrous, ... *M. macranthum*.

Flowers 2-3 in. long, yellow; leaves beneath densely puberulous, glabrescent coriaceous, ... *M. prismaticum*.

*Sect. 2. Eu-Melodorum*. Calyx deeply 3-cleft; flowers small, 1 in. or less long.

Flowers about an in. long or a little longer; carpels simply tomentose, ... *M. rubiginosum*.

Flowers about  $\frac{1}{2}$  in. long, ... *M. Griffithii*.

Flowers nearly  $\frac{3}{4}$  in. long; carpels densely verrucose, pubescent, ... *M. verrucosum*.

Flowers 1 in. long; carpels almost glabrous, ... *M. bicolor*.

1. *M. MACRANTHUM* Kurz in Journ. As. Soc. Beng., 1872, 291. (*Unona macrantha*, Kurz in And. Rep. ed. 1. App. B. 1; *Pyramidanthe macrantha*, Kurz, l. c., ed. 2, p. 29).

HAB. Rather rare in the tropical forests about Port Mouat, South Andaman. Fl. June.

The large flowers resemble much those of *Unona longiflora*, the leaves those of *Goniiothalamus cardiopetalus*.

2. *M. RUBIGINOSUM*, Hf. and Th. Fl. Ind. I. 116 and Ind. Fl. I. 79.

HAB. Rare in the tropical forests of Martaban (E. of Tounghoo); Tenasserim; Chittagong.





3. *M. GRIFFITHII*, Hf. and Th. Fl. Ind. I. 120 and Ind. Fl. I. 80. (*Fissistigma scandens*, Griff. Not. Dicot. 706).

HAB. Tenasserim, Mergui (Griff.) Fl. Deeb.

4. *M. VERRUCOSUM*, Hf. and Th. Fl. Ind. I. 119 and Ind. Fl. I. 80.

HAB. Ava, Khakyen hills, Ponsce (J. And.) Fl. Apr.

5. *M. BICOLOR*, Hf. and Th. Fl. Ind. I. 119 and Ind. Fl. I. 80. (*Uvaria bicolor*, Roxb. Fl. Ind. II. 662).

HAB. Tropical forests of the western slopes of Pegu, along the headwaters of the Panyo-gyee choung (feeder of Toungnyo choung); Ava (accord. Hf. and Th.).

### Mitrephora, Bl.

#### Conspectus of species.

\* Flowers dioecious, small (about 3 lin. long).

Leaves (except nerves beneath) glabrous; inflorescence and petals tomentose, *M. reticulata*.

\* \* Flowers conspicuous, 1 to 2 in. in diameter.

Leaves softly tomentose beneath; flowers 2 in. across, on short and thick pedicels, ... .. *M. tomentosa*.

Leaves minutely puberulous or almost glabrous, chartaceous; flowers about an in. across, on long slender pedicels, ... .. *M. vandaeiflora*.

1. *M. RETICULATA*, Hf. and Th. Ind. Fl. I. 77. (*U. reticulata*, Bl. Fl. Jav. Anon. 50. t. 24; *M. aperta*, T. et B. in Nat. Tydsch. Ned. Ind.).

HAB. Tenasserim (Helf.).

2. *M. TOMENTOSA*, Hf. and Th. Fl. Ind. I. 113, and Ind. Fl. I. 76.

HAB. Chittagong.

3. *M. VANDAEIFLORA*, Kurz, MS.

HAB. Not unfrequent in the tropical forests of the Pegu Yomah and Martaban. Fl. Febr.—March.

This should be compared with *M. Maingayi*, Hf. and Th., a species which I cannot recognize from the description alone. There are two varieties differing in the texture and pubescence of the leaves, but the flowers are alike in both.

### Orophea, Bl.

#### Conspectus of species.

\* Flowers very small (hardly 2 to 3 lin. in diameter).

Leaves glabrous; sepals minutely hispid, ciliate; carpels globular, stalked, ... *O. polycarpa*.

Leaves along the nerves pubescent; sepals densely pubescent; carpels elongated, oblong, sessile, ... .. *O. hexandra*.

\* \* Flowers rather large (about an in. in diameter).

Leaves rather large, pubescent beneath, ... .. *O. Brandisii*.

1. *O. POLYCARPA*, A. DC. Mém. Soc. Gen. V. 39; Hf. Ind. Fl. I. 91. (*Anonacea* Griff. Dicot. Ic. t. 654?, *Melodorum monospermum*, Kurz in And. Rep. App. B. p. 1.)



HAB. Rather frequent in the tropical forests of the Andamans; Martaban, Meeplay (Brandis); Tenasserim, along the Salween (Wll.). Fl. March; Fr. June.

2. *O. HEXANDRA*, Bl. Bydr. 18; Miq. Fl. Ind. Bat. I-2, 29. (*Bocagea hexandra*, Bl. Fl. Jav. Anon. 13, t. 40; *O. acuminata*, A. DC. Mém. Soc. Gen. V. 39; Hf. Ind. Fl. I. 91).

HAB. Tenasserim, Tavoy (Wall.).

3. *O. BRANDISII*, Hf. and Th. Ind. Fl. I. 92.

HAB. Not uncommon along choungs in the tropical forests of Martaban (Toukyeghat); Tenasserim, Thounggyeen (Brandis). Fl. Apr. May.

### *Miliusa*, Lesch.

#### *Conspectus of species.*

\* Pedicels 2 to 4 in. long, without or with a rudimentary bractlet.

Tomentose; berries tomentose, shortly stalked, ... .. *M. velutina*.

\* \* Pedicels short, only 6 to 10 lin. long.

Branchlets and leaves beneath rusty pubescent; flowers about  $\frac{1}{2}$  in. long; pedicels bracteoid, ... .. *M. Roxburghiana*.

Leaves glabrous; flowers nearly an in. long; pedicels bracteoid, ... .. *M. tristis*.

Almost glabrous; pedicels without bractlet, ... .. *M. sclerocarpa*.

1. *M. VELUTINA*, Hf. and Th. Fl. Ind. I. 151 and Ind. Fl. I. 87; Bedd. Ic. Pl. Ind. or. t. 87. (*Uvaria villosa*, Roxb. Fl. Ind. II. 664).

HAB. In the lower mixed, the low and moist forests, entering also the savannah forests; Ava; common in Pegu, but rare in Martaban, also in Tenasserim. Fl. H. S.; Fr. Begin. of R. S.

2. *M. ROXBURGHIANA*, Hf. and Th. Fl. Ind. I. 150 and Ind. Fl. I. 87. (*Uvaria dioica*, Roxb. Fl. Ind. II. 659; *Hyalostemma Roxburghiana*, Wall. Cat. 6434; Griff. Dicot. Icon. t. 653; *Phæanthus dioicus*, Kurz in Journ. As. Soc. 1870, 62).

HAB. Chittagong; Tenasserim.

3. *M. TRISTIS*, Kurz, MS.

HAB. Ava, Khakyen hills, at Ponsee (Dr. J. Anderson). Fl. March.

4. *M. SCLEROCARPA*, Kurz in Journ. As. Soc. Beng. 1872, 291. (*Saccopetalum sclerocarpum*, Hf. and Th. Ind. Fl. I. 88).

HAB. Not unfrequent in the upper mixed forests of the Martaban hills, E. of Tounghoo, at 2000 to 3000 ft. elevation; Tenasserim, Moulmein (Wall.) Fl. March.

The difference between *Phæanthus* and *Miliusa* is restricted to the nature of the connective, a character which in *Uvaria* has met with no consideration.

N. B. *NEPHROSTIGMA*, sp. Griff. Not. Dicot. 717 from Mergui I cannot identify. Griffith says that the genus is easily recognizable by the sepals and outer petals being conform. Now if "*sepala exteriora majora*" be a misprint for *minora*, we might compare it with *Miliusa* or *Phæanthus*.



**MENISPERMACEÆ.***Conspectus of genera.*

*Trib. I. TINOSPOREÆ.* Carpels 3, rarely 6. Style-scar almost terminal, rarely ventral or almost basal. Seeds meniscoid or rarely oblong, albuminous. Cotyledons leafy, usually spreading laterally.

\* Petals 6, shorter than the inner sepals. Style-scar almost terminal.

1. *PARABÆNA.* Sepals 6. Filaments connate, the anthers in heads. Seeds meniscoid.

2. *ASPIDOCARYA.* Sepals 12. Filaments connate, the anthers sessile round the peltate end of the column. Seeds oblong.

3. *TINOSFORA.* Sepals 6. Stamens 5; anther-cells lateral, distinct. Seeds meniscoid. Albumen ruminant.

\* \* Petals none.

4. *FIBRAUREA.* Sepals 9. Stamens 6, free. Style-scar almost terminal. Albumen horny.

5. *ANAMIRTA.* Sepals 6, in 2 rows. Filaments connate, anthers sessile at the end of the column. Style-scar almost basal. Albumen ruminant.

*Trib. II. COCCULEÆ.* Flowers 3-merous. Ovaries usually 3. Style-scar almost basal, rarely almost terminal. Seeds horseshoe-shaped. Albumen copious. Embryo slender, the cotyledons linear or only slightly dilated.

× Albumen ruminant.

6. *TILIACORA.* Petals 6, minute. Carpels 6-12.

× × Albumen homogeneous.

7. *LIMACIA.* Petals 5-8. Styles short, compressed.

8. *COCCULUS.* Petals 6. Carpels 3-6. Styles subulate, simple or 2-cleft.

*Trib. III. CISSAMPELIDÆ.* Flowers 3-5-merous. Ovaries usually solitary. Style-scar usually almost basal. Endocarp dorsally muricate or echinate. Seeds horseshoe-shaped. Albumen scanty. Embryo linear, the cotyledons appressed.

9. *STEPHANIA.* Petals 3 to 5, shorter than the sepals, rather thick. Staminal column peltate at summit. Flowers umbellate.

10. *CISSAMPELOS.* Male fl.: sepals 4; petals united in a cup. Female fl.: sepals and petals 1-2, the latter entire 2-cleft or -parted; styles simple. Flowers cymose or racemose.

11. *CYCLEA.* Male fl.: Sepals connate; petals more or less connate. Female fl.: sepals 2, lateral, free; petals none; styles 2-parted. Flowers panicled.

*Trib. IV. PACHYGONEÆ.* Flowers usually 3-merous. Ovaries and carpels usually 3, rarely 9-12. Style-scar almost basal or ventral. Seed curved hooked or inflexed, without albumen. Cotyledons thick and fleshy.

12. *PACHYGONE.* Sepals, petals and stamens, 6 each. Anthers blunt. Styles thick, Drupes reniform.

**Parabæna, Miers.**

1. *P. SAGITTATA*, Miers in Tayl. Ann. ser. 2-VII. 39 and Contr. Bot. III. 57 and 391, t. 98; Hf. Ind. Fl. I. 96.

HAB. Not unfrequent in the tropical forests along the eastern slopes of the Pegu Yomah and Martaban; also Ava and Chittagong. Fl. March, Apr.—Fr. May, June.



**Aspidocarya, Hf. and Th.**

1. *A. UVIFERA*, Hf. and Th. Fl. Ind. I. 180 and Ind. Fl. I. 95.  
Miers contrib. III. 58. t. 99. var.  $\beta$ , MOLLIS, all parts softly pubescent.  
HAB. Ava, Khakyen hills, Ponsee (J. Anderson). Fl. Apr.

**Tinospora, Miers.***Conspectus of species.*

\* Drupes the size of a pea, the putamen tuberculate.

- Young parts and the orbicular-ovate blunt leaves beneath tomentose, ... *T. tomentosa*.  
Young parts and the cordate-ovate acuminate leaves beneath pubescent, ... *T. Malabarica*.  
All parts glabrous, ... .. *T. crispa*.

\*\* Putamen smooth.

- All parts glabrous; drupes the size of a pea, ... .. *T. cordifolia*.  
Young leaves and shoots pubescent or tomentose; drupes the size of a cherry, *T. nudiflora*.

1. *T. TOMENTOSA*, Miers in Tayl. Ann. ser. 2 VII. 38 and Contr. Bot. III. 33; Hf. Ind. Fl. I. 96. (*Menispermum tomentosum*, Roxb. Fl. Ind. III. 813).

HAB. Ava (Wall.)

2. *T. MALABARICA*, Miers in Tayl. Ann. ser. 2. VII. 38 and Contr. Bot. III. 32; Hf. Ind. Fl. I. 96.

HAB. Chittagong (Hf. and Th.)

3. *T. CRISPA*, Miers in Tayl. Ann. ser. 2, VII. 38 and Contr. Bot. III. 34 Scheff. Obs. Phyt. III. 71. t. 1. (*Menispermum verrucosum*, Roxb. Fl.; Ind. III. 808).

HAB. Pegu (teste Hf. and Th.); Arracan, Sandoway (teste Miers).

4. *T. CORDIFOLIA*, Miers in Tayl. Ann. ser. 2. VII. 38 and Contr. Bot. III. 31; Hf. Ind. Fl. I. 97; Scheff. Obs. Phyt. III. 71, t. 2. (*Menispermum cordifolium*, Willd. IV. 826; Roxb. Fl. Ind. III. 811? *Cocculus cordifolius* DC. Syst. I. 518; Wight Ic. t. 485-486).

HAB. Not unfrequent in the forests of the Andaman islands; Ava (Wall.); Chittagong.

Roxburgh figures the stems of his plant as 5- (or 6?) angular, and the angles as produced into membranous waved wings; it can, therefore, hardly be the same as Miers's.

5. *T. NUDIFLORA*, Kurz in Journ. As. Soc. Bengal, 1872, 292. (*Cocculus nudiflorus*, Griff. Not. Dicot. 307).

HAB. Rather frequent in the tropical forests of the E. slopes of the Pegu Yomah and Martaban; also Tenasserim.—Fl. March, Apr.; Fr. Begin. of R. S.

**Fibraurea, Lour.**

1. *F. TINCTORIA*, Lour. Fl. Coch. II. 769; Miers Contr. Bot. III. 41; Hf. Ind. Fl. I. 98; Scheff. Obs. Phyt. III. 73, t. 4.

HAB. Tenasserim, Tavoy (Griff.).



HAB. Not unfrequent in the tropical forests along the eastern slopes of the Pegu Yomah and Martaban down to Tenasserim (Moulmein); also Chittagong.

2. C. LINNEANUS, (*Menispermum hirsutum* L. sp. pl. 1469 Roxb. Fl. Ind. III. 814; *Menispermum myosotoides*, L. l. c.; *Cocculus villosus*, DC. Syst. I. 525; Hf. and Th. Ind. Fl. I. 101).

HAB. Frequent in hedges, shrubberies, etc. around villages all over Pegu and Prome; also Ava. Fl. Jan. Febr.

3. C. INCANUS, Colebr. in Linn. Trans. XVII. 57; Scheff. Obs. Phyt. III. 76, t. 10. (*Pericampylus incanus*, Miers in Tayl. Ann. ser. 2. VII. 40 and Contr. Bot. III. 118; Hf. and Th. Ind. Fl. I. 102; *Menispermum villosum* Roxb. Fl. Ind. III. 812).

HAB. Frequent in savannahs, mixed and other deciduous forests all over Burmah from Chittagong, Ava, Pegu and Martaban down to Tenasserim, up to 3000 ft. elevation. Fl. March.

### Stephania, Lour.

#### Conspectus of species.

Leaves glabrous or pubescent; flowers very shortly pedicelled, in head-like umbellets,

.. *St. hernandifolia*.

Leaves glabrous; flowers slenderly pedicelled forming loose cymose umbellets, *St. rotunda*.

1. ST. HERNANDIFOLIA, Walp. Rep. I. 96; Hf. and Th. Fl. I. 196 and Ind. Fl. I. 103; Wight Jc. t. 939.

Var.  $\alpha$ . GLABRESCENS, Hf. and Th. l. c.

Var.  $\beta$ . DISCOLOR Hf. and Th. l. c. (*Cissampelos hernandifolia*, Willd., Roxb. Fl. Ind. III. 842; *Lissampelos hexandra*, Roxb. l. c. 840).

HAB. Frequent all over Burmah from Ava and Chittagong down to Tenasserim, in savannahs and mixed forests, etc. Fl. March to June; Fr. Apr. June.

2. ST. ROTUNDA, Lour. Fl. Coch. 747; Hf. and Th. Fl. Ind. I. 197 and Ind. Fl. I. 103; Scheff. Obs. Phytol. III. 79, t. 14. (*Cissampelos glabra* Roxb. Fl. Ind. III. 840, Wal-tiedde, Gaertn. Fruct. I. t. 180.).

HAB. Frequent in mixed forests and shrubberies round villages, etc. of Pegu; also Tenasserim, Moulmein; Andamans. Fl. May, June.

### Cissampelos, L.

1. C. PAREIRA, L. sp. pl. 1473; Hf. and Th. Fl. Ind. I. 198 and Ind. Fl. I. 103; Scheff. Obs. Phyt. III. 79, t. 14. (*C. Caapa*, L. sp. pl. 1473; Roxb. Fl. Ind. III. 842; *C. convolvulacea*, Willd.; Roxb. l. c.)

HAB. Common all over Burma and adjacent provinces, in all leafshedding forests and in cultivated lands, but specially in the savannahs and savannah-forests, up to 3000 ft. elevation. Fl. H. S.



**Anamirta, Colebr.**

1. A. COCCULUS, WA. Prod. I. 446; Hf. Ind. Fl. I. 98. (*A. paniculata*, Colebr. Linn. Trans. XIII. 66; Miers Contr. Bot. III. 51; *Menispermum Cocculus*, L. sp. pl. 1468; Roxb. Fl. Ind. III. 807; *Menispermum heteroclitum*, Roxb. l. c. 817).

HAB. Tenasserim, Moulmein (Falconer). Fl. Febr.

**Tiliacora, Colebr.**

1. T. RACEMOSA, Colebr. in Lin. Trans. XIII. 67; Miers Contr. Bot. III. 76 t. 104; Hf. Ind. Fl. I. 99. (*Menispermum polycarpum*, Roxb. Fl. Ind. III. 816; *Tiliacora acuminata*, Miers in Tayl. Ann. ser. 2. VII. 39; Scheff. Obs. Phytol. III. 74. t. 7) *Cocculus acuminatus*, DC. Prod. I. 99; Deless. Icon. Sel. I. t. 95).

HAB. Pegu (teste F. Mason.)

**Limacia, Lour.***Conspectus of species.*

*Subg. 1. Hypserpa*, Miers. Sepals 8—12, broad, of thin texture, the smaller ones imbricate. Older leaves glabrous; stamens 6 to 10, ... .. *...L. cuspidata.*

*Subg. 2. Eu-Limacia*, Miers. Sepals 9, thick, valvate in bud.

Stamens 3; adult leaves glabrous, ... .. *...L. triandra.*

Stamens 6; branches and leaves beneath velvety tomentose, ... .. *...L. velutina.*

1. L. CUSPIDATA, Hf. and Th. Fl. Ind. I. 189, and Ind. Fl. I. 100. Scheff. Obs. Phytogr. III. 75 t. 8.

HAB. Tenasserim, Mergui (Griff).

2. L. TRIANDRA, Miers in Tayl. Ann. ser. 2, VII. 43; Hf. Ind. Fl. I. 100.; (*Menispermum triandrum*, Roxb. Fl. Ind. III. 816; *L. Amherstiana*, Miers Contr. III. 112).

HAB. Prome (Wall.); Tenasserim, Kogun, Amherst (Wall. and Falc).

3. L. VELUTINA, Miers in Tayl. Ann. ser. 2, VII. 43; Hf. Ind. Fl. I. 100. (*Cocculus villosus*, Griff. Not. Dicot. 308?).

HAB. Tenasserim, Moulmein (Lobb. 335); Mergui (Griff).

**Cocculus, DC.***Conspectus of species.*

*Subg. 1. Cocculus*. Styles simple.

Leaves glabrous, on very long petioles, ... .. *...C. glaucescens.*

Leaves more or less pubescent, especially beneath; petioles short, ... .. *...C. villosus.*

*Subg. 2. Pericampylus*. Styles 2-parted.

Leaves almost peltate, tomentose or pubescent beneath, ... .. *...C. incanus.*

1. C. GLAUDESCENS, Bl. Bydr. 25; Miq. Ann. Mus. Lugd. Bat. IV. 84. (*C. macrocarpus*, WA. Prod. I. 13; Wight Ill. I. 22, t. 7; Hf. Ind. Fl. I. 101).



**Cyclea, Arn.**

1. *C. PELTATA*, Hf. and Th. Fl. Ind. I. 201 and Ind. Fl. I. 104 ; Scheff. Obs. Phyt. III. 79, t. 15.

HAB. Not unfrequent in the open, especially the hill Eng-forests, and in dry and drier upper mixed forests all over Burma from Chittagong and Ava down to Tenasserim. Fl. Fr. Oct. to March.

**Pachygone, Miers.***Conspectus of species.*

Inflorescence and drupes densely tomentose ; leaves with prominent nervation, *P. dasycarpa*.  
Inflorescence glabrous ; leaves almost polished, ... .. *P. odorifera*.

1. *P. DASYCARPA*, Kurz in Journ. As. Soc. Beng. 1870. 62. (*Antitaxis ramiflora*, Miers Contr. III. 1871, 358).

HAB. Upper Tenasserim, Moulmein District, on limestone (Dr. Stoliczka). Fl. R. S.

2. *P. ODORIFERA*, Miers Contr. Bot. III. 333.

HAB. Common in the swamp forests of Prome, Pegu and Martaban ; Tenasserim, Moulmein, on limestone rocks (Parish).

I have seen no authentic specimens of *P. odorifera*, and refer my plant here on the authority of Baker (*in lit.*). Unfortunately I did not succeed in finding either flower or fruit of this common climber, but it certainly is different from *P. ovata*.

One or two other large-leaved species occur on the Andamans and Nicobars, but they are only in leaves.

**BERBERIDEÆ.***Conspectus of genera.*

*Trib. I. LARDIZABALEÆ.* Flowers unisexual or polygamous. Carpels 3. Usually climbers.

1. *PARVATIA*. Leaves digitate. Stamens monadelphous. Climbers.

*Trib. II. BERBERIDEÆ.* Flowers hermaphrodite. Carpel solitary, erect or stemless.

2. *BERBERIS*. Ovules erect, basilar. Fruit a berry. Shrubs.

**Berberis, L.**

1. *B. NEPALENSIS*, Spreng. Syst. veg. II. 120 ; Hf. Ind. Fl. I. 109 (*Mahonia Nepalensis*, DC. Prod. I. 109 Deless. Icon. sel. II. t. 4 ; *B. Leschenaultii*, Wall. Cat. 1479 ; Wight Jc. t. 940).

HAB. Tenasserim, Mergui (Griff.).

Hf. and Th. in the first edition of their Flora of India cite Mergui as a habitat for *Parvatia Brunoniana* ; Dr. Brandis, however, informs me that no Burmese specimens of this species exist in the Kew Herbarium.



*NYMPHÆACEÆ.**Conspectus of genera.*

*Subord. I. NYMPHÆÆ.* Sepals 4—6. Petals and stamens numerous. Carpels confluent with one another or with the disk into one ovary; ovules many. Seeds albuminous.

1. *NYMPHÆA.* Sepals, petals and stamens half superior, inserted on the disk, the latter confluent with the carpels. Not armed.

2. *BARCLAYA.* Sepals inferior; petals superior; carpels immersed in the torus. Not armed.

3. *EURYALE.* Sepals, petals and stamens superior. Carpels immersed in the torus. Armed with sharp thorns.

*Subord. II. NELUMBONEÆ.* Sepals 4 or 5. Petals and stamens numerous, hypogynous. Carpels sunk in pits without order in the flat turbinate torus.

4. *NELUMBO.* Only genus.

*Nymphæa, L.**Conspectus of species.*

Anthers without appendage, ... .. *N. Lotus.*  
 Anthers terminated with a long appendage, ... .. *N. stellata.*

1. *N. LOTUS, L.* sp. pl. 729; Hf. and Th. Fl. Ind. I. 241 and Ind. Fl. I. 114.

Var. *α. LOTUS*, Hf. and Th. l. c.; (*N. rubra*, Roxb. Fl. Ind. II. 576; Wight Ill. t. 10; Bot. Rep. t. 503; Bot. Mag. t. 1280, 1364 and 4665; *N. esculenta*, Roxb. l. c. 578).

Var. *β. CORDIFOLIA*, Hf. and Th. l. c.

Var. *γ. PUBESCENS*, Hf. and Th. l. c. (*N. pubescens*, Willd. sp. pl. II. 1154?; *N. Lotus*, Roxb. Fl. Ind. II. 577).

HAB. In tanks, lakes and swamps, etc.; var. *α.* not unfrequent in Pegu; also Tenasserim; var. *β.* in Chittagong; var. *γ.* not unfrequent in lakes and stagnant waters of the lower parts of Pegu. Fl. R. S.

2. *N. STELLATA*, Willd. sp. pl. II. 1153; Hf. and Th. Ind. I. 243 and Ind. Fl. I. 114.

Var. *α. CYANEA*, Hf. and Th. l. c. (*N. cyanea*, Roxb. Fl. Ind. II. 577; *N. stellata*, Bot. Mag. t. 2058).

Var. *β. PARVIFLORA*, Hf. and Th. l. c. (*N. stellata*, Willd. l. c.; Bot. Rep. t. 330; Roxb. Fl. Ind. II. 577.)

Var. *γ. versicolor*, Hf. and Th. l. c.

HAB. In stagnant waters and swamps; var. *α.* and *β.* frequent in Chittagong, Pegu and Arracan; var. *γ.* Chittagong. Fl. R. S.

*Barclaya, Wall.*

1. *B. LONGIFOLIA*, Wall. in Linn. Trans. XV. 442, t. 18; Hook. Icon. Pl. t. 809-10; Griff. Not. Dicot. 218, t. 57; Hf. Ind. I. 115.

HAB. In running streams; Pegu, Rangoon; Tenasserim, Moulmein and southwards to Mergui, apparently frequent. Fl. R. S.



**Euryale, Salisb.**

1. *E. FEROX*, Salisb. Ann. Bot. II. 73; Roxb. Corom. Pl. III. t. 244; Bot. Mag. t. 1447; Griff. Dicot. t. 657; Hf. Ind. I. 115. (*Anneslea spinosa*, Roxb. Fl. Ind. II. 573; Bot. Reg. t. 618).

HAB. Chittagong, in swamps. Fl. R. S.

**Nelumbo, Ad.**

1. *N. NUCIFERA*, Gaertn. Fruct. I. 73; Casp. in Miq. Ann. Mus. Lugd. Bat. II. 242. (*Nelumbium speciosum*, Willd. sp. pl. II. 1258; Roxb. Fl. Ind. II. 647; Bot. Mag. t. 903; Wight Ill. I. t. 9; Hf. Ind. Fl. I. 116),

HAB. Not unfrequent in stagnant waters of the alluvial plains of Pegu; frequently cultivated in tanks, pagodas, etc. Fl. Apr. May.

**PAPAVERACEÆ.***Conspectus of genera.*

1. **PAPAYER.** Capsules opening by short valves or pores. Stigmas 4 or more, radiating on a sessile disk.

2. **ARGEMONE.** Capsules opening by short valves. Stigmas 4 to 6, radiating from the top of a depressed style.

**Papaver, L.**

\*1. *P. SOMNIFERUM*, L. sp. pl. 726; Roxb. Fl. Ind. II. 571; Engl. Bot. t. 2145; Sibth. Fl. Græc. t. 491; Rohb. Fl. Germ. III. t. 17; Hf. and Th. Fl. Ind. I. 250.

HAB. Not much cultivated in Burmah, especially in Ava. Fl. Febr. March, Fr. Apr. May.

**Argemone, L.**

\*1. *ARG. MEXICANA*, L. sp. pl. 727; Roxb. Fl. Ind. II. 571; Wight Ill. I. t. 11.; Bot. Mag. t. 243; Bot. Reg. t. 1343; Gray. Gen. t. 47; Hf. Ind. Fl. I. 117.

HAB. Domesticated in lower Ava (J. Anderson); in cultivated lands near Rangoon, sporadically. Fl. Jan.

**CRUCIFERÆ.***Conspectus of genera.*

\* Pods elongate or short, dehiscing along their whole length, not jointed, rarely indehiscent at the summit. Septa and valves equally broad and parallel.

O Cotyledons accumbent.

1. **NASTURTIUM.** Pods long or short, the valves turgid or not. Seeds small, in 2 rows. Flowers usually yellow.

2. **CARDAMINE.** Pods narrow, elongate linear, the valves flat and elastic. Seeds in 2 rows. Flowers usually white.

O O Cotyledons longitudinally conduplicate.



3. BRASSICA. Pods elongate. Stigma truncate or 2-lobed. Seeds in a single row.  
\* \* Pods short, dehiscing along their whole length, not articulate, the valves flat, at right angles to the septum.
4. LEPIDIUM. Pods oblong, notched, 2- rarely 4-seeded. Flowers white.  
\* \* \* Pods elongate, indehiscent, not jointed but contracted and pithy within between the seeds. Cotyledons incumbent.
5. RAPHANUS. Flowers pale lilac or white with coloured veins.

### Nasturtium, L.

#### Conspectus of species.

Pods rather thick, 2 to 5 times longer than the pedicels, more or less curved, *N. Indicum*.  
Pods very slender, straight or nearly so, 1 to 1½ in. long, ... *N. montanum*.

1. *N. INDICUM*, L. Mant. 93; Hf. and Th. in Linn. Proc. V. 138.  
(*N. Madagascariense*, WA. Prod. I. 19; Wight Ill. I. t. 13; *Sinapis divaricata*, Roxb. Fl. Ind. III. 123).

Var.  $\beta$ . *BENGHALENSIS* (*N. Benghalense* DC. Syst. II. 198; Hf. and Th. in Linn. Proc. V. 139).

Var.  $\gamma$ . *GLABRUM*, quite glabrous, the flowers thrice as large; pods larger and on longer pedicels; racemes bracted. Habit of *Sinapis*.

HAB. Var.  $\beta$ . very common on muddy banks of rivers, in rubbishy places round villages, all over Pegu and Martaban; also Chittagong and Tenasserim; var.  $\gamma$ . in the dried up bed of streamlets in the swamp-forests of the Irrawaddi alluvium. Fl. January to June; Fr. Febr. July.

Var.  $\gamma$ . is a very distinct form and will probably have to be separated, but unfortunately there are no ripe pods.

2. *N. DIFFUSUM*, DC. Prod. I. 139; Miq. Fl. Ind. Bat. I/2. 94 and Ill. Fl. Arch. Ind. 1870, 14. (*N. Montanum*, Wall. in Linn. Proc. V. 139; Bth. Fl. Hongk. 16.; *Sinapis pusilla*, Roxb. Fl. Ind. III. 125?).

HAB. Ava (Wall.).

### Cardamine, L.

1. *C. HIRSUTA*, L. sp. pl. 915; Engl. Bot. t. 492, Hf. and Th. in Linn. Journ. V. 146.

Var.  $\beta$ . *SYLVATICA*, Hf. and T. And. Ind. Fl. I. 138.

HAB. Ava, Bhamo (J. Anderson); Martaban, Toukyeghat, in shady muddy places (only one specimen!). Fl. Febr. March.

### Brassica, L.

#### Conspectus of species.

Stem-leaves at base stem-clasping with their auricles,	...	... <i>B. campestris</i> .
Stem-leaves often petioled, not stem-clasping,		
Stem-leaves narrowed at base or petioled; flowers yellow,	...	... <i>B. juncea</i> .
Stem-leaves broad at base and sessile but not stem-clasping; petals white or yellowish white with violet veins,...	... ..	... <i>B. oleracea</i> .



1. *B. CAMPESTRIS*, L. sp. pl. 931; Engl. Bot. t. 2224; Hf. Ind. Fl. I. 156. (*B. rapa*, L. sp. pl. 931; Engl. Bot. t. 2176; *B. Napus*, L. sp. pl. 931; *Sinapis dichotoma*, Roxb. Fl. Ind. III. 117; *S. glauca*, Roxb. l. c. 118; *B. brassicata*, Roxb. l. c. 120).

\* HAB. Arracan, rare in fields near Akyab; Ava, Bhamo. Fl. Decb.

2. *B. JUNCEA*, Hf. and Th. in Linn. Proc. V. 170. and Ind. Fl. I. 157. (*Sinapis juncea*, L. sp. pl. 934; *Sinapis ramosa*, Roxb. Fl. Ind. III. 119; *Sinapis rugosa*, Roxb. l. c. 122; *Sinapis patens*, Roxb. l. c. 124; *Sinapis cuneifolia*, Roxb. l. c. 116).

HAB. Frequent in fields, along river-banks, etc., all over Pegu and Martaban; also much cultivated; Ava, Bhamo. Fl. Fr. C. S.

\* 3. *B. OLERACEA*, L. sp. pl. 932; Engl. Bot. t. 637; Fl. Dan. XII. t. 2056; Roxb. Fl. Germ. 97; DC. Prod. I. 213.

HAB. Not much cultivated in several varieties like cabbage, cauliflower, Kohlrabbi, etc. Fl. Febr. March; Fr. Apr.

### **Lepidium. L.**

\* 1. *L. SATIVUM*, L. sp. pl. 899; Roxb. Fl. Ind. III. 116; Hf. Ind. Fl. I. 159; Fl. Dan. X. t. 1761; Sibth. Fl. Graec. t. 616; Roxb. Fl. Germ. II. t. 9; Wight Ill. I. t. 12; NE. Gen. Germ. X. t. 10.

HAB. Cultivated only. Fl. Fr. C. S.

### **Raphanus. L.**

\* 1. *R. SATIVUS*, L. sp. pl. 935 Roxb. Fl. Ind. III. 126; Rehb. Fl. Germ. II. t. 3; NE. Gen. Germ. X. t. 10; Hf. Ind. Fl. I. 166.

HAB. Cultivated and often like wild on the banks of rivers, etc. Fl. Febr. March; Fr. Apr.

## **CAPPARIDÆ.**

### *Conspectus of genera.*

*Trib. I. CLEOMÆ.* Fruit capsular, 1-celled, usually pod-like, rarely short or didymous; capsules 4—8- or many-seeded. Herbs.

× Torus short, the stamens inserted immediately within the sepals and petals.

1. *CLEOME*. Torus often produced into an appendage. Stamens 4 to 6 or more, some of them often without anthers.

× × Torus elongated, bearing the stamens at the top under the ovary.

2. *GYNANDROPSIS*. Stamens 6, all perfect; filaments long.

*Trib. II. CAPPARÆ.* Fruit berry-like or drupaceous. Shrubs or trees.

\* Sepals united at the base in a funnel- or bell-shaped tube, or forming a spathaceous calyx.

3. *NIEBUHRIA*. Calyx-tube funnel- or bell-shaped, the limb 4-lobed, valvate in bud. Petals none. Berry ovoid. Leaves 1- to 3-foliolate.

\* \* Sepals free or connate only at the very base.

× Petals present.





4. *CAPPARIS*. Calyx various. Corolla imbricate. Petals 4. Stamens usually definite, inserted at the base of the short torus. Leaves simple.

5. *CADABA*. The 2 outer sepals valvate in bud. Torus elongated into a tube. Berry cylindrical, almost indehiscent. Leaves 1- to 3-foliolate.

6. *CRATEVA*. Flowers polygamous. Corolla open in bud already. Sepals 3, all imbricate in bud. Petals 4, on long claws. Leaves 3- to 5-foliolate.

×× Petals none.

7. *ROYDSIA*. Sepals 6. Drupes 1—3-seeded. Leaves simple.

### Cleome, L.

#### *Conspectus of species.*

Plant thinly appressed hispid. Petals white or pale rose-coloured, ... *C. Chelidonii*,  
Glandular-pubescent; petals yellow, ... .. *C. viscosa*.

1. *C. CHELIDONII*, L. f. Suppl. 300; Roxb. Fl. Ind. III. 127; Hf. Ind. Fl. I. 170. (*Polanisia Chelidonii*, DC. Prod. I. 242; Wight Ic. t. 319).

HAB. Not unfrequent along the borders of the Prome road between Pongday and the Myitmakha choung. Fl. March, Apr.

I do not feel quite sure whether this plant is really indigenous. As it seems restricted to the locality given above, it may well have been introduced by the Madras people employed in the construction of the Prome road.

2. *C. VISCOSA*, L. sp. pl. 447; Roxb. Fl. Ind. III. 128; Hf. Ind. Fl. I. 170. (*Polanisia icosandra*, WA. Prod. I. 22; Wight Ic. t. 2.).

HAB. A weed all over Burma from Chittagong and Ava down to Tenasserim, in cultivated lands, along river banks, in rubbishy places, ruined pagodas, etc. Fl. Fr. R. S.

### Gynandropsis, DC.

1. *G. PENTAPHYLLA*, DC. Prod. I. 238; Hf. Ind. Fl. I. 171. (*Cleome pentaphylla*, L. sp. pl.; Roxb. Fl. Ind. III. 126; A. Gray, Gen. t. 78; Bot. Mag. t. 1681).

HAB. A weed all over Burma from Chittagong and Ava down to Tenasserim, in rubbishy places, etc., around villages. Fl. May, June; Fr. June, July.

### Niebuhria, DC.

1. *N. ? VARIABILIS*, (*Capparis ? variabilis*, Wall. Cat. 7004; Hf. Ind. Fl. I. 180).

HAB. Ava, in the Irrawaddi valley along the banks of the river below Yenang choung, and on the Segain hills.

### Capparis, L.

#### *Conspectus of species.*

\* Pedicels arising from above the axils of the leaves in a line one above the other (supra-axillary); or rarely axillary and solitary.

O Gynophore and ovary glabrous or nearly so.





† Ovary almost sessile, the gynophore being only  $\frac{1}{2}$  to 1 lin. long.

Glabrous; leaves large, chartaceous; pedicels 2—3 lin. long, the upper flowers forming terminal racemes (by the reduction of leaves), ... *C. roydsiaefolia*.

†† Ovary on a long slender gynophore.

× All parts glabrous.

Leaves as in preceding, chartaceous, much veined with a callous point at the usually retuse apex, ... *C. micracantha*.

Leaves acuminate.

Unarmed; pedicels and sepals outside glabrous; stamens numerous, petals pilose, ... *C. membranifolia*.

Thorny; pedicels glabrous; sepals woolly along the borders; stamens 8, ... *C. disticha*.

Unarmed or nearly so; sepals with tomentose margins, ... *C. vminica*.

×× Young shoots and sepals rusty or greyish tomentose or pubescent.

Leaves chartaceous, ovate, green, while young tawny or rusty pilose beneath, flowers usually several together, ... *C. horrida*.

Leaves green, oboval, while young thinly appressed pubescent, soon quite glabrous and coriaceous; petioles  $\frac{1}{2}$ — $\frac{3}{4}$  in. long; flowers several, ... *C. crassifolia*.

Leaves glaucous, rhomboid-ovate to rhomboid-linear, acute, while young minutely greyish puberulous beneath; petioles only  $\frac{1}{4}$  to  $\frac{1}{2}$  in. long; berries verrucose; flowers solitary, ... *C. polymorpha*.

O O Gynophore and ovary densely tomentose.

All younger parts and leaves tomentose or pubescent; pedicels and sepals densely tomentose, ... *C. flavicans*.

\* \* Pedicels in umbels or corymbs in the axils of the leaves or on shortened axillary branchlets, sometimes collected into terminal or lateral panicles.

× Calyx and pedicels densely tomentose Ovary glabrous.

All parts tomentose or shortly and densely yellowish pubescent, the hairs not papillose; peduncle naked, ... *C. grandis*.

Apparently as preceding, but upperside of leaves papillose; peduncle 1-leaved at tip, ... *C. orbiculata*.

Branches brown-tomentose; leaves glabrous, 3-plinerved, ... *C. trinervia*.

×× Calyx and pedicels glabrous. Berry 1-seeded.

O Gynophore very short (in fruit not above  $\frac{1}{2}$  in.); umbels or corymb peduncled.

Branchlets pubescent; leaves thick coriaceous, glaucous, retuse or blunt; umbels axillary, berries 1—2 seeded, ... *C. glauca*.

Glabrous; leaves purplish beneath, acuminate; umbels in terminal panicles, berries 1-seeded, ... *C. Hasseltiana*.

O O Gynophore long and slender.

† Umbels or corymbs peduncled.

Glabrous; leaves green, retuse; flowers  $\frac{1}{2}$  in. in diameter, the umbels arranged in terminal panicles; berries several-seeded, ... *C. floribunda*.

Glabrous; petiole puberulous; flowers 2 in. in diameter, ... *C. versicolor*.

†† Umbels sessile or nearly so.

Leaves green, retuse; corymbs usually terminal on the branchlets, many-flowered, ... *C. sepiaria*.

1. *C. MICRACANTHA*, DC. Prod. I. 247; Hf. Ind. Fl. I. 179. (*C. callosa*, Bl. Bydr. 53; Miq. Ill. Fl. Arch. Ind. I. 29. t. 16.)



HAB. Pegu, Rangoon (R. Scott); Upper Tenasserim, Weingo valley, Moulmein (Wall., Falc.)

2. *C. MEMBRANIFOLIA*, Kurz MS.

HAB. Not unfrequent in the tropical forests of the eastern slopes of the Pegu Yomah and Martaban. Fl. Apr. May.

3. *C. VIMINEA*, Hf. and Th. Ind. Fl. I. 179.

HAB. Tenasserim (teste Hf. and Th.).

4. *C. DISTICHA*, Kurz MS. (*C. oxyphylla*, Wall. Cat. 6997, non Miq.).

HAB. Frequent in the swamp-forests and inundated localities of the Irrawaddi and Sittang alluvium and Martaban. Fl. Apr. May.

5. *C. HORRIDA*, L. f. Suppl. 264; Wight Ic. t. 173; Griff. Not. Dicot. 579. t. 608; Hf. Ind. Fl. I. 178 pp. (*C. Zeylanica*, Roxb. Fl. Ind. II. 567.)

HAB. Frequent in mixed forests and savannahs, but more especially in the dry forests of Prome and Pegu; also Martaban. Fl. Apr. May.

6. *C. CRASSIFOLIA*, Kurz in Journ. As. Soc. Beng., 1873.

HAB. Frequent in the dry forests of Prome District. Fl. March.

7. *C. POLYMORPHA*, Kurz in Journ. As. Soc. Beng., 1873.

HAB. Frequent in the dry and Eng forests of Prome district. Fl. March; Fr. Apr. May.

8. *C. FLAVICANS*, Wall. Cat. 7003; Kurz in Journ. As. Soc. Bengal 1870, 62; Hf. Ind. Pl. I. 180.

HAB. Ava, Irrawaddi valley at Yenangchoung and Segain (Wall.) Fr. Sept.

9. *C. GRANDIS*, L. f. Mant. 263; Hf. Ind. Fl. I. 176. (*C. bisperma*, Roxb. Fl. Ind. II. 568 teste Hf. Th.) var.  $\beta$ . *AURICANS*, the nerves beneath more prominent; flowers only  $\frac{1}{2}$  to  $\frac{1}{2}$  in. in diameter (*C. auricans*, Kurz MS).

HAB. Frequent in the dry forests of the Prome District. Fl. Apr.

The Burmese plant will most probably have to form a distinct species, if it should not turn out to be identical with the following, of which the description in Hook. Ind. Fl. is too imperfect for recognition.

10. *C. ORBICULATA*, Wall. ap. Hf. Ind. Fl. I. 176.

HAB. Ava, Segain hills.

11. *C. TRINERVIA*, Hf. and Th. Ind. Fl. I. 175.

HAB. Tenasserim (Helf.); Tavoy (Parish).

12. *C. GLAUCA*, Wall. Cat. 7005; Hf. Ind. Fl. I. 180.

HAB. Ava, common near pagodas at Pagha myo (Wall.).

13. *C. HASSELTIANA*, Miq. Ill. Fl. Arch. Ind. I. 24. t. 13. (*C. ambigua*, Kurz in And. Rep. ed. 2. 30.)

HAB. In the tropical forests of South Andaman. Fr. Apr. May.

14. *C. FLORIBUNDA*, Wight Ill. I. 33. t. 14.; Hf. Ind. Fl. I. 177. (*C. oligandra*, Griff. Not. Dicot. 577. teste Hf. and Th.).



HAB. Tenasserim, Mergui (Griff.).

15. *C. VERSICOLOR*, Griff. Not. Dicot. 577; Hf. Ind. Fl. I. 175.

HAB. Tenasserim, Mergui, in forests (Griff.). Fl. Jan.

I have not seen specimens, but it cannot be compared with *C. Salaccensis*, Bl., which has small flowers, (cf. Miq. Illustr. Fl. Arch. Ind. I. t. 12).

16. *C. SEPLARIA*, L. sp. pl. 720; Roxb. Fl. Ind. II. 568; Jacquem. Voy. Ind. or. t. 22.; Hf. Ind. Fl. I. 177.

HAB. Common along the rocky coast of the Andamans; Pegu (teste Hf. and Th.). Fl. May.

### *Cratæva*, L.

#### *Conspectus of species.*

Flowers corymbose; fruits globular; large tree; ovary globular,	... <i>C. Roxburghii</i> .
Flowers corymbose; fruits ovoid-oblong; ovary oblong,	... .. <i>C. narvala</i> .
Flowers solitary, axillary; fruits oblong; meagre shrub,	... .. <i>C. hygrophila</i> .

1. *C. ROXBURGHII*, Br. in Denh. and Clapp. Trav. Append. 224; Hook. Icon. Pl. t. 178; Kurz in Trim. Journ. Bot., 1874, 195, t. 148, f. 1—5. (*Capparis trifoliata*, Roxb. Fl. Ind. II. 571.).

HAB. Not unfrequent in the dry forests of the Prome District; Upper Tenasserim. Fl. H. S.; Fr. Close of R. S.

2. *C. NARVALA*, Ham. in Linn. Trans. XV; Kurz in Trim. Journ. Bot., 1874, 195.

HAB. Tenasserim, Moulmein District. Fl. Febr. March.

3. *C. HYGROPHILA*, Kurz in Journ. As. Soc. Beng., 1872, 292 and in Trim. Journ. Bot., 1874, 196, t. 148, f. 6—7.

HAB. Not uncommon in the swamp forests of the Irrawaddi alluvium. Fl. (Decb. or Nov. ?); Fr. C. S.

### *Roydsia*, Roxb.

#### *Conspectus of species.*

<i>Subg. 1. Eu-Roydsia.</i> Styles 3, short, sessile.	
Sepals a line long, 4 of them free, the 2 others coherent,	... .. <i>R. obtusifolia</i> .
<i>Subg. 2. Atylostylis</i> , Hf. Style long, terminated by 3 minute stigmas. Sepals ligulate.	
blunt,	... .. <i>R. parviflora</i> .

1. *R. OBTUSIFOLIA*, Hf. and Th. Ind. Fl. I. 180 and 409.

HAB. Frequent in the swamp forests and along inundated river banks of the alluvial lands of the Irrawaddi and Sittang rivers; also Tenasserim. Fl. March; Fr. May, June.

2. *R. PARVIFLORA*, Griff. Not. Dicot. 578. t. 607. f. 1.; Hf. Ind. Fl. I. 409.

HAB. Ava, in woods near the serpentine mines at Hookum (Griff.).



*MORINGACEÆ.**Moringa*, Juss.

1. *M. pterygosperma*, Gaertn. Fruct. II. 314. t. 147; Wight Ill. I. t. 77; Miq. Fl. Ind. Bot. I. 350. (*Hyperanthera Moringa*, Vhl. Symb. I. 30; Griff. Not. Dicot. 572. t. 609 f. 1—2).

HAB. Cultivated in and around villages all over Burma and the adjacent islands. Fl. Febr. March; Fr. H. S.

A most perplexing genus to systematists. It appears to me nearest allied to *Violaceæ*.

*VIOLACEÆ.**Conspectus of genera.*

*Trib. I. VIOLEÆ.* Corolla irregular, the lower petal much larger. Herbs or perennials.

1. *VIOLA*. Sepals produced at base. Lower petal spurred or saccate.

2. *JONIDIUM*. Sepals not produced at base. Petals clawed, the lower one gibbous or saccate at base.

*Trib. II. ALSODEIEÆ.* Corolla regular or nearly so. Shrubs or trees.

3. *ALSODEIA*. Petals 5, free. Connective produced beyond the anther. Capsule loculicidal.

*Viola*, L.*Conspectus of species.*

× Stigma 3-lobed, terminal.

Without stolons; stigma 3-lobed; stipules entire, ... .. *V. Patrinii*.

Stoloniferous; stigma 2-lobed; stipules toothed, ... .. *V. diffusa*.

× × Stigma very oblique or quite lateral.

Stoloniferous; stipules toothed or fimbriate, ... .. *V. serpens*.

1. *V. PATRINII*, DC. Prod. I. 293; Hf. Fl. Ind. I. 183. (*V. primulifolia*, L. sp. pl. p. p.; Roxb. Fl. Ind. I. 650; *V. Walkerii*, Wight Ill. I. 42. t. 18).

HAB. Ava, Khakyen hills, Ponsee (J. Anderson). Fl. March.

2. *V. DIFFUSA*, Ging in DC. Prod. I. 298; Hf. Ind. Fl. I. 183.

HAB. Ava, Khakyen hills, Ponsee (J. Anderson). Fl. Fr. March.

3. *V. SERPENS*, Wall. in Roxb. Fl. Ind. II. 449; Oudem. in Miq. Ann. Mus. Lugd. Bot. III. 76; Hf. Ind. Fl. I. 184; Royle Ill. Him. Pl. 74. t. 18. f. 1.

HAB. Ava, Khakyen hills (J. Anderson); not unfrequent in the damp hill-forests along rocky rivulets in Martaban at 3000 to 6000 ft. elevation; Tenasserim, Moulmein (Parish). Fl. Fr. March.



**Jonidium, Vent.**

1. *J. SUPFRUTICOSUM*, Ging in DC. Prod. I. 311; Wight Ill. t. 19 and Ic. t. 308; Hf. Ind. Fl. I. 185. (*Viola suffruticosa*, L.; Roxb. Fl. Ind. I. 649).

HAB. I have observed only a few sterile plants along a road in Rangoon.

**Alsodeia, Thouars.***Conspectus of species.*

*Subg. 1. Dioryctandra*, Hassk. Stamens exerted, anthers cohering in a cone.

Leaves small; capsules very small, almost sessile, ... *...A. Roxburghii.*

*Subg. 2. Alsodeia.* Stamens included; anthers free.

× Ovary and style glabrous.

O Flowers in long racemes.

Racemes and calyx puberulous, ... *...A. longiracemosa.*

O O Flowers fascicled.

Pedicels and calyx glabrous, ... *...A. Bengalensis.*

× × Ovary and style pubescent or tomentose.

Leaves rather large, glabrous or nearly so, ... *...A. Griffithii.*

Leaves pubescent; capsule densely pubescent, ... *...A. mollis.*

1. *A. ROXBURGHII*, Wall. Cat. 7189; Hf. Ind. Fl. I. 186. (*Vareca heteroclita*, Roxb. Fl. Ind. I. 648).

HAB. Not unfrequent in the tropical forests of the Andamans. Fl. May, June.

2. *A. LONGIRACEMOSA*, Kurz in Journ. As. Soc. Beng. 1870, 63. (*A. racemosa*, Hf. and Th. Ind. Fl. I. 186. non Mart.).

HAB. Rather frequent in the tropical forests of Martaban up to 1500 ft. elevation. Fl. March, Apr.; Fr. May, June.

3. *A. BENGALENSIS*, Wall. Act. Med. and Phys. Soc. Calc. VII. 224; Hf. Ind. Fl. I. 186.

HAB. Not unfrequent in the tropical forests of the eastern slopes of the Pegu Yomah and Martaban, entering here also the drier hill forests up to 4000 ft. elevation; common on the Andamans. Fl. H. S.

4. *A. GRIFFITHII*, Hf. and Th. Ind. Fl. I. 187.

HAB. Ava, near the serpentine mines in the Hookum valley (Griff.).

5. *A. MOLLIS*, Hf. and Th. Ind. Fl. I. 188.

HAB. Tenasserim, Mergui (Griff.).

**BIXINEÆ.***Conspectus of genera.*

*Trib. I. BIXEÆ.* Petals broad, twisted in bud, without a scale or basal appendage. Anthers opening by pores or short slits.

1. *COCHLOSpermum*. Capsule 3-valved. Seeds cochleate, pilose or woolly. Leaves palmately-lobed or digitate.





2. *BIXA*. Capsule 2-valved. Seeds straight, glabrous, with a pulpy testa. Leaves simple.

*Trib. II. FLACOURTIEÆ*. Petals none, or if present only small, imbricate in the bud, without scales. Anthers opening by valves.

\* Petals present.

3. *SCOLOPIA*. Flowers bisexual. Petals 4 to 6. Stamens indefinite.

\* \* Petals none.

4. *FLACOURTIA*. Flowers usually dioecious. Ovary 2- to 8-celled.

5. *XYLOSMA*. Flowers dioecious. Ovary 1-celled. Seeds glabrous.

*Trib. III. PANGIEÆ*. Flowers dioecious. Petals with an adnate scale or basal appendage.

\* Calyx at first entire, afterwards splitting variously.

6. *GYNOCARDIA*. Calyx cup-shaped. Stamens numerous, free. Styles 3 with cor-date stigmas.

7. *RYPARIA*. Calyx globose, rupturing into 3 to 4 deciduous segments. Stamens 4 or 5, united in a tubular column.

× × Sepals distinct already in bud, much imbricated.

8. *HYDNOCARPUS*. Sepals 4 or 5. Petals 5—9. Stamens 5 or indefinite.

### *Cochlospermum*, Kth.

1. *C. GOSSYPIUM*, DC. Prod. I. 527; Wight Ill. Ind. Bot. Suppl. 36. t. 18; Hf. Ind. Bot. I. 190. (*Bombax gossypium*, L.; Roxb. Fl. Ind. III. 169.

HAB. In the dry forests on the hills opposite Prome. Fl. March.

### *Bixa*, L.

\*1. *B. ORELLANA*, L. sp. pl. 730; Roxb. Fl. Ind. II. 581; Wight Ill. I. t. 17; Bot. Mag. t. 1456; Griff. Not. Dicot. 610; Hf. Ind. Fl. I. 190.

HAB. Frequently cultivated in and around villages all over Burma, and occasionally seen half wild along the courses of mountain streams in the Pegu Yomah.—Fl. RS; Fr. CS.

### *Scolopia*, Schreb.

1. *S. ROXBURGHII*, Clos in Ann. d. sc. nat. ser. 4. VIII. 250 excl. syn.; Hf. Ind. Fl. I. 190. (*Ludia spinosa*, Roxb. Fl. Ind. II. 507.)

HAB. Tenasserim, Mergui (Griff. Helf. 211.)

Roxburgh's plant is described as having lucid leaves, but his figure as well as the plant cultivated in the HBC. have them opaque when dried.

### *Flacourtia*, Comm.

#### *Conspectus of species.*

\* Stigma simple, subulaté (not thickened at apex).

Berries the size of a pepper-kernel; pyrenes smooth, convex on back, ... *F. Sumatrana*.

\* \* Styles short or almost wanting, thickened and truncate at the apex or more or less bluntish 2-lobed.

O Pyrenes compressed and quite flat.





Branchlets and leaves glabrous or nearly so, armed with spines; flowers dioecious,  
*...F. cataphracta.*

As preceding but not armed; flowers hermaphrodite, *...F. inermis.*

O O Pyrenes obovoid-3-angular with rounded back.

× Leaves acuminate.

Branchlets and leaves tawny-pubescent, *...F. mollis.*

× × Leaves blunt or nearly so. Berries the size of a pea.

Leaves coriaceous, 3 to 5 in. long, *...F. sapida.*

Leaves small (1—1½ in. long), membranous.

Armed with numerous long spines, *...F. sepiaria.*

Unarmed, or only with a few short axillary spines, *...F. rotundifolia.*

1. *F. SUMATRANA*, Planch. ap. Hf. Ind. Fl. I. 192.

HAB. Tenasserim (Helf. 203-B).

N. B. *Ludia foetida*, Roxb., doubtfully referred by Hf. to this species, is  
*Homalium foetidum*, Bth.

2. *F. CATAPHRACTA*, Roxb. Corom. Pl. III. t. 222 and Fl. Ind. III. 834; Hf. Ind. Fl. I. 193.

HAB. Frequent in the upper mixed forests of the Pegu Yomah and Martaban. Fl. Jan. Febr.; Fr. May.

3. *F. INERMIS*, Roxb. Corom. Pl. III. 16 t. 222 and Fl. Ind. III. 833; Hf. Ind. Fl. I. 192.

HAB. Martaban, along the bank of the Toukyeghat river at the 7-Pagodas. Fr. May.

4. *F. MOLLIS*, Hf. and Th. Ind. I. 192.

HAB. Tenasserim (Helf. 215; Griff.).

5. *F. SAPIDA*, Roxb. Corom. Pl. I. t. 69 and Fl. Ind. III. 835; WA. Prod. I. 29.

Var. α. *GENUINA*, young shoots and leaves beneath and the inflorescences more or less greyish tomentose; stigmas in fruit remote.

Var. β. *PUBERULA*, leaves and young shoots glabrous; inflorescence puberulous; stigmas star-like cohering, sessile.

Var. γ. *GLABERRIMA*, all parts quite glabrous, stigmas only cohering during flowering.

HAB. Var. α. Ava (Griff.); var. β. and γ. common in the dry and Eng forests of the Prome District. Fl. Febr. March; Fr. Apr. May.

6. *F. SEPIARIA*, Roxb. Corom. Pl. I. t. 68 and Fl. Ind. III. 835; Hf. Ind. Fl. I. 194. (*F. obcordata*, Roxb. Fl. Ind. III. 835 teste Hf. and Th.).

HAB. Chittagong.

7. *F. ROTUNDIFOLIA*, Clos in Ann. sc. nat. Bot. ser. 4. VIII. 218.

HAB. Rather frequent in the coast jungles of the Andamans. Fl. May.



**Gynocardia, R. Br.**

1. *G. ODORATA*, Roxb. Corom. Pl. III. 95. t. 299; Hf. Ind. Fl. I. 195. (*Choulmoogra odorata*, Roxb. Fl. Ind. III. 836).

HAB. Not unfrequent in the tropical forests of the Martaban hills, up to 3000 ft. elevation; also Chittagong (accord. Hf. and Th. also Rangoon and Tenasserim). Fr. March.

**Ryparia, Bl.**

1. *R. CÆSIA*, Bl. Fl. Jav. Praef. 8; Miq. Fl. Ind. Bot. I-2. 361; Kurz in Trim. Journ. Bot., 1873, 233.

HAB. In the tropical forests of South Andaman.

**Hydnocarpus Gärtn.***Conspectus of species.*

Sepals 4; petals and staminods 9—5 each, the latter free or united, ... *H. heterophyllus*.

Sepals 5; petals and staminods 5 each, ... .. *H. castaneus*.

1. *H. HETEROPHYLLUS*, Bl. Rumph. IV. 22. t. 178. B. f. 1. (*Taractogenos Blumei*, Hassk. Retz. I. 127; Miq. Fl. Ind. Bat. I/2. 110).

HAB. Very frequent in the tropical forests of Martaban, less so along the eastern and southern slopes of the Pegu Yomah; also Tenasserim. Fl. Apr.; Fr. Febr. March.

The number of sepals appears constant, but that of stamens, petals, and scales varies exceedingly; the last are found free and more or less connate in flowers from the same tree.

2. *H. CÆSTANEUS*, Hf. and Th. Ind. Fl. I. 197.

HAB. King's Island, by the sides of torrents, (Andamans according to Hf. and Th. but more probably Mergui Archipelago where such an island exists).

**PITTOSPOREÆ.****Pittosporum, Banks.**

1. *P. FERRUGINEUM*, Ait. Hort. Kew. ed. 2. II. 27; Bot. Mag. t. 2074; Hf. Ind. Fl. I. 199.

HAB. Tenasserim, Moulmein.

**POLYGALÆÆ.***Conspectus of genera.*

*Trib. I. POLYGALÆÆ.* Seeds albuminous. Petals more or less united into a gamopetalous corolla.

O Erect herbs or perennials, rarely parasites.

1. *POLYGALA*. Stamens 8, united. The 2 inner sepals wing-like

2. *SALOMONIA*. Stamens 4 or 5. Sepals almost equal, petal-like.

O O Scandent shrubs.





3. SECURIDACA. Stamens 8, united; fruit an 1-celled indehiscent samara.  
*Trib. II. XANTHOPHYLLEÆ.* Albumen none. Petals and stamens free. Fruit globular, indehiscent.

4. XANTHOPHYLLUM. Petals 5. Stamens 8. Ovary almost 1-celled, with several ovules.

### Polygala, L.

#### Conspectus of species.

*Subg. 1. Blepharidium.* The 2 inner sepals (wings) persistent, petaloid or herbaceous.

\* Wings herbaceous or green, sepal-like, not or with a narrow hyaline margin, acute or acuminate.

Erect, stout, 1 to 2 ft. high; bracts fallen before flowering. Flowers small, white with purple tips; capsule ciliate, ... *P. glomerata.*

Small, a few in. high; flowers and bracts as in preceding; capsule glabrous, not ciliate, ... *P. telephioides.*

Small; flowers yellow or orange-yellow with dull orange tips; bracts persistent during flowering, ... *P. Chinensis.*

\*\* Wings petal-like and coloured, blunt and often mucronate.

O Stems terete.

Wings about a lin. long, usually puberulous; capsules oblong, puberulous, not margined, ... *P. erioptera.*

Wings about 3 lin. long, puberulous; capsules almost orbicular with narrow ciliate margin, ... *P. crotalarioides.*

O O Stems sharply angular.

Erect, glabrous; leaves linear; flowers small, in terminal and lateral racemes, *P. leptalea.*

*Subg. 2. Semeiocardium, Zoll.* Calyx deciduous after flowering. Keel not crested. Seeds albuminous. Flowers small.

Capsules not nerved, almost rotundate, not winged, ... *P. glaucescens.*

Capsules strongly nerved, oblong, the membranous borders produced wing-like at the summit, ... *P. cardiocarpa.*

*Subg. 3. Chamabuxus, Tournef.* Calyx deciduous. Keel crested. Albumen none. Flowers rather large. Perennials or shrubs.

Flowers pale-lilac; keel-crest 2-lobed, the lobes entire, ... *S. venenosa.*

Flowers pale-lilac; keel-crest 2-lobed, the lobes many-cleft; capsules membranous; strophiole minute, ... *P. Kareuianum.*

Flowers yellow; keel-crest 2-lobed, the lobes many-cleft; capsule coriaceous; strophiole very large, ... *P. arillata.*

1. *P. GLOMERATA*, Lour. Fl. Coch. II. 518; Miq. Fl. Ind. Bot. I/2. 125; Hf. Ind. Fl. I. 206.

HAB. Frequent in deserted hill-toungyas and pastures of the Martaban hills, up to 4000 ft. elevation. Fl. Febr. March; Fr. March.

2. *P. TELEPHIOIDES*, Willd. sp. pl. III. 876; Hf. Ind. Fl. I. 205.

HAB. Rare in the Eng forests of the western slopes of the Pegu Yoma as for instance about Myodweng. Fl. Jan.

Hardly more than a stunted variety of the former.

3. *P. CHINENSIS*, L. sp. pl. 989; DC. Prod. I. 331; Hf. Ind. Fl. I. 204. (*P. arvensis*, Willd. sp. pl. III. 876; Roxb. Fl. Ind. III. 218).





HAB. Pegu (teste Bennet). Fl. R. S.

4. *P. ERIOPTERA*, DC. Prod. I. 326 ; Deless. Ic. sel. III. t. 15 ; Hf. Ind. Fl. I. 203.

HAB. Apparently frequent in Ava (Yenanghoung, Paghan, Melloon, etc.) ; Prome hills. Fl. Fr. Sept. Decb.

5. *P. CROTALARIOIDES*, Ham. in Don. Prod. Nep. 199 ; Wall. Pl. As. rar. II. t. 185 ; Royle Ill. Him. Pl. t. 19, fig. c. ; Hf. Ind. Fl. I. 201.

HAB. Rather frequent in the Eng and dry forests of the Prome district. Fl. Fr. March.

6. *P. LEPTALEA*, DC. Prod. I. 325 ; Bth. Fl. Austr. I. 139 ; Hf. Ind. Fl. I. 202. (*P. sp.* 1 and 2, Griff. Not. Dicot. 536-537. t. 597).

HAB. Not unfrequent in the open, especially the Eng forests of Pegu, Prome, and Ava. Fl. Nov. Decb.

7. *P. GLAUDESCENS*, Wall. Cat. 4182 ; Walp. Rep. I. 234. (*P. furcata*, Royle Ill. Him. Pl. 76. t. 19, fig. B. ; *Semeiocardium glaucescens*, Hassk. in Miq. Ann. Lugd. Bat. I. 151 ; *P. triphylla*  $\beta$ . *glaucescens*, Bennet in Hf. Ind. Fl. I. 201).

HAB. Ava, Meaong and Taong dong ; Prome District ; Tenasserim, Attaran. Fl. Fr. July—Sept.

8. *P. CARDIOCARPA*. Kurz in Journ. As. Soc. Beng. 1872, 293.

HAB. Tenasserim, Wakabin (Rev. C. Parish No. 307). Fl. Octob.

9. *P. KARENSIUM*, Kurz in Journ. As. Soc. Beng. 1872, 292.

HAB. Frequent in the drier hill-forests of the Martaban hills at 4000 to 6000 ft. elevation. Fl. Fr. March.

10. *P. ARILLATA*, Ham. in Don. Prod. Nep. 199 ; Wall. Pl. As. rar. I. t. 100 ; Griff. Not. Dicot. 5352 ; Hf. Ind. Fl. I. 200).

HAB. Ava (teste Bennet).

### Salomonina, Lour.

#### Conspectus of species.

*Subg. 1. Salomonina*, DC. Stems leafy ; not parasitic.

O Leaves on short petioles, cordate or ovate.

Glabrous ; leaves acute ; capsules crested, ... *...S. Cantoniensis.*

Blunt leaves and stems along the wings fringed ; capsules crested, ... *...S. longiciliata.*

Glabrous ; leaves acute ; capsules minute, not crested, ... *...S. edentula.*

O O Leaves sessile.

Glabrous or nearly so, leaves oblong to oblong-lanceolate, ... *...S. oblongifolia.*

*Subg. 2. Epirhizanthus*, Bl. Parasitic, leafless or scaly, ... *...S. cylindrica.*

1. *S. CANTONIENSIS*, Lour. Fl. Coch. 18 ; Hf. Ind. Fl. I. 206. (*S. sp.* Griff. Not. Dicot. 539).

HAB. Pegu, Rangoon (R. Scott) ; Tenasserim, Tavoy (Wall). Fl. Fr. Aug.

2. *S. LONGICILIATA*, Kurz in Journ. As. Soc. Bengal, 1872, 292.



HAB. Sporadic in the Eng forests along the western slopes of the Pegu Yomah, for inst. between Pansuay and Myodweng. Fl. Fr. Decbr. Jan.

3. *S. OBLONGIFOLIA*, DC. Prod. I. 334; Deless. Ic. sel. III. t. 19; Hf. Ind. Fl. I. 207. (*S. obovata*, Wight Ill. I. t. 22.; *S. angulata*, Griff. Not. Dicot. 539. t. 585. A. f. 16?).

HAB. Tenasserim, Tavoy (Wall).

4. *S. CYLINDRICA*, (*Epirhizanthus cylindrica*, Bl. Regensb Flor. 1825. 134; Miq. Fl. Ind. Bat. I/2. 128 t. 15; *S. aphylla*, Griff. in Linn. Trans. XIX. 342; Hf. Ind. Fl. I. 207; *S. parasitica*, Griff. Not. Dicot. 538. t. 598. f. 5).

HAB. Tenasserim, on bamboo-trunks between decayed wood rather frequent about Mergui, Palar. (Griff.). Fl. Octob.

### Securidaca, L.

1. *S. INAPPENDICULATA*, Hassk in Pl. Jav. rar. 295, (*S. Tavoyana*, Wall. Cat. 4196, nomen nudum; Hf. Ind. Fl. I. 208. *S. scandens* Ham. in Wall. Cat. 4195, non Jacq. *S. paniculata*, Roxb. Fl. Ind. III. 219, non Lamk).

HAB. Chittagong; Arracan (Capt. Marcgrave); Tenasserim, Tavoy (Wall). Fl. Aug.

### Xanthophyllum, Roxb.

#### Conspectus of species.

\* Ovary sessile (i. e. the stalk not exerted from the annular disk).

O Panicle remotely supra-axillary (and terminal).

Leaves glaucous and rather opaque beneath; panicles diffuse, glabrous; calyx and slender pedicels glabrous; ovary minutely pubescent, the stigma broadly 2-lobed, ... *X. virens*.

O O Panicles or racemes truly axillary (and terminal).

× Ovary and style villous. (Leaves glaucescent beneath).

Panicles tawny puberulous; pedicels thick, 1½-2 lin. long, puberulous, ... *X. eglandulosum*.

Racemes slender, in lax tomentose panicles; pedicels slender, ... *X. glaucum*.

× × Ovary glabrous, the style slender pubescent.

Panicle diffuse, greyish velvety; fruit glabrous; leaves glossy, drying yellowish like

*Symplocos*, ... *X. flavescens*.

\* \* Ovary shortly stalked.

Leaves rather large; racemes simple or in short robust axillary panicles, greyish velvety; ovary glabrous with a very thick villous style, ... *X. affine*.

1. *X. VIRENS*, Roxb. Corom. Pl. III. t. 284 and Fl. Ind. II. 221.

HAB. Not unfrequent in the evergreen tropical forests of the Pegu Yomah and Martaban, up to 3000 ft. elevation. Fl. Febr. March.

2. *X. FLAVESCENS*, Roxb. Fl. Ind. II. 222. (*X. paniculatum*, Miq. Suppl. Fl. Sum. I. 393).

HAB. Frequent in the swamp-forests of Martaban; Tenasserim, Moulmein down to Tavoy; also Chittagong. Fl. Febr. May; Fr. May.



*X. flavescens* as revised in Hf. Ind. Fl. is a mixture of species, but it is impossible to clear up the synonymy so long as the numbers of distributed collections are not given. No one would wish the numbers of all collections extant or references to common and well-known species, but in the case of new or critical species such might reasonably be looked for. *X. angustifolium*, Wight Ill. 50 t. 23, with simple or almost simple subaxillary racemes and a villous stalked ovary, is certainly not identical with Roxburgh's plant; besides, it is a small tree or rather shrub, while the latter is a timber-tree.

3. *X. EGLANDULOSUM*, Griff. Not. Dicot. 537 t. 598 f. 4. (*X. Griffithii*, Hf. Ind. Fl. I. 210.)

HAB. Tenasserim, Mergui (Griff.; Helf).

The leaves are described as very coriaceous just as those of *X. insignis* (to which I doubtfully refer Maingay's plant No. 348 distributed as *Carapa* sp.); if this be really so, I fear that I have not seen the true species, for in my specimens they are hardly more coriaceous than those of *X. flavescens*. The Andaman specimens in leaf only, wrongly named by me *X. glaucum*, would probably come here or be referable to *X. virens*.

4. *X. GLAUCUM*, Wall. Cat. 4199; Hf. Ind. Fl. I. 209.

HAB. Common in the swamp-forests and around inundated jungle-swamps of the alluvial plains and base of hills of Pegu and Martaban; also Tenasserim. Fl. March, Apr.

5. *X. AFFINE*, Bennet in Hf. Ind. Fl. I. 209, vix Korth.

HAB. Tenasserim, Mergui.

Wall. Cat. 4198 is cited for this species, but the specimens B from Tenasserim as far as seen by me have a sessile ovary and are referred by me to *X. flavescens*, while A. from Penang is here understood to be the above plant.

### CARYOPHYLLÆ.

#### Conspectus of genera.

*Trib. I SILENÆ.* Calyx gamosepalous, 4- to 5-lobed. Petals and stamens hypogynous, often raised on a stalk-like torus. Styles distinct from the base. Stipules none.

1. *GYPHOPHILA.* Calyx turbinate-tubular or bell-shaped, broadly and almost wingedly 5-nerved. Capsule deeply 4-valved. Styles usually 2.

*Trib. II ALSINÆ.* Sepals free. Stamens inserted on an annular disk, rarely perigynous. Styles free.

2. *BRACHYSTEMMA.* Petals entire. Capsules depressed, 1-seeded. Styles 2. Stipules none.

*Trib. III POLYCARPÆ.* Sepals free. Stamens inserted on an annular disk. Styles united. Stipules scarious.

3. *DRYMARIA.* Petals lobed. Sepals not keeled. Style very short.

4. *POLYCARPON.* Sepals keeled. Petals entire. Style short.

5. *POLYCARPÆA.* Sepals not keeled, scarious. Petals entire or notched. Style elongate.



**Gypsophila, L.**

1. *G. VACCARIA*, Smith in Sibth. Fl. Græc. t. 380 ; WA. Prod. I. 42. (*Saponaria Vaccaria*, L. sp. pl. 583 ; Bot. Mag. t. 2290 Hf. Ind. Fl. I. 217 ; *Saponaria perfoliata*, Roxb. Fl. Ind. II. 445.)

HAB. South Andaman, in a cultivated field near Aberdeen, introduced. Fl. May.

**Brachystemma, Don.**

1. *B. CALYCINUM*, Don Prod. Nep. 646 ; Fenzl. Atakt. t. 16 ; Hf. Ind. Fl. I. 937.

HAB. Ava, Khakyen hills, near Ponline (J. Anderson). Fl. March.

**Drymaria, Willd.**

1. *D. CORDATA*, Willd. ap. Roem. and Schult. syst. veg. V. 406 ; Hf. Ind. Fl. I. 244. (*Cerastium cordifolium*, Roxb. Fl. Ind. II. 458).

HAB. Rather frequent in hill-toungyas and betel-nut gardens of Martaban, at 2000 to 5000 ft. elevation ; also Ava, Bhamo. Fl. Febr. March.

**Polycarpon, L.**

1. *P. LÆFLINGLE*, Bth. and Hf. Gen. Pl. I. 153 ; Hf. Ind. Fl. I. 245. (*Pharnaceum depressum*, L. Mant. 564 ; *Læflingia Indica*, Retz. Obs. 48 ; Roxb. Fl. Ind. I. 165).

HAB. Very frequent in agrarian lands, banks of rivers, etc., of Pegu and Martaban ; also Tenasserim, Chittagong and Arracan. Fl. May, June.

**Polycarpæa, Lour.**

1. *P. CORYMBOSA*, Lamk. Ill. No. 2798 ; Wight Ic. t. 712 and Ill. II. t. 110 ; Hf. Ind. Fl. I. 245. (*Celosia corymbosa*, Roxb. Fl. Ind. I. 681 ; *P. marginata*, Prsl. Bot. Bemerk. 141 ; Walp. Ann. I. 83).

HAB. Ava, on limestone near Segain and Pagha myo ; Prome ; Tenasserim, Moulmein. Fl. Dec. Jan.

**PORTULACACEÆ.***Conspectus of genera.*

1. **PORTULACA.** Ovary half-inferior, with the petals and stamens perigynous.
2. **TALINUM.** Ovary free. Sepals usually deciduous. Seeds caruncled.

**Portulaca, L.***Conspectus of species.*

Joins glabrous ; flowers clustered by 3 to 5,	...	...	... <i>C. oleracea</i> .
Joins pilose ; flowers solitary,	...	...	<i>C. quadrifida</i> .

1. *P. OLERACEA*, L. sp. pl. 638 ; Roxb. Fl. Ind. II. 463 ; Hf. Ind. Fl. I. 246 ; Sibth. Fl. Græc. t. 457 ; DC. Pl. grass. t. 123 ; Gray Gen. t. 99.





HAB. Common all over Burma in cultivated lands, waste places, on roads, etc. Fl.  $\infty$ .

2. *P. QUADRIFIDA*, L. Mant. 78; Roxb. Fl. Ind. II. 464; Wight Ill. II. t. 102; Hf. Ind. Fl. I. 247. (*C. meridiana*, L. Suppl. 248; Roxb. l. c. 463).

HAB. Pegu, in waste places, on roads, etc.; Ava. Fl. C. & R. S.

#### **Talinum, Adans.**

1. *T. CUNEIFOLIUM*, Willd. sp. pl. II. 864; Roxb. Fl. Ind. II. 465; Hf. Ind. Fl. I. 247.

HAB. Ava, on the Pagodas at Pagha myo (Wall. 6846).

#### **TAMARISCINEÆ.**

##### **Tamarix, L.**

##### *Conspectus of species.*

Leaves appressed to the terete almost simple branchlets and branches; flowers sessile, rose-coloured, in dense short spikes, ... *T. dioica*.

Leaves somewhat spreading on the very short thin and branched branchlets; flowers pedicelled, white, in loose slender terminal or variously lateral racemes, ... *T. gallica*.

1. *T. DIOICA*, Roxb. Fl. Ind. II. 101; Griff. Not. Dicot. 465, t. 577. f. 2.; Hf. Ind. Fl. I. 249.

HAB. Ava, in the hills opposite Pagha Myo. Fl. C. S.; Fr. R. S.

2. *T. GALLICA*, L. sp. pl. 386; Wight Ill. t. 24 f. 1.; Hf. Ind. Fl. I. 248. (*T. Indica*, Willd. in Act. Not. Cur. Berol. IV. 214; Roxb. Fl. Ind. II. 100).

HAB. Rather frequent in the tidal savannahs and tidal forests of Lower Pegu. Fl. R. S.; Fr. C. S.

#### **ELATINEÆ.**

##### *Conspectus of genera.*

*Trib. I. BERGIEÆ.* Ovary-cells with several ovules. Albumen none. Perianth complete. Fruit a capsule.

1. *BERGIA*. Sepals acute. Flowers usually 5-merous. Capsule almost crustaceous, septicidal or septifragal.

*Trib. II. HIPPURIDEÆ.* (incl. *Callitricheæ*?). Ovary-cells with a solitary ovule. Perianth complete or incomplete. Seeds albuminous. Fruit a drupe.

2. *MYRIOPHYLLUM*. Calyx truncate or 4-toothed. Petals 2—4 or none. Stamens 2—3. Ovary deeply 2- or 4-sulcate; stigmas 2 or 4, blunt or feathery. Drupe separable into 2 or 4 nut-like carpels.

*Trib. III. CERATOPHYLLÆ.* Flowers unisexual. Perianth 12-phyllous. Ovary 1-celled, with a solitary ovule. Fruit a nut.

3. *CERATOPHYLLUM*. Stamens several. Styles 2. Fruit a nut.

##### **Bergia, L.**

##### *Conspectus of species.*

\* Glabrous; flowers white, sessile, ... *B. verticillata*.  
Pubescent or hirsute; flowers rose-coloured, shortly pedicelled, ... *B. ammannioides*.





1. *B. VERTICILLATA*, Willd. sp. pl. II. 770; Roxb. Fl. Ind. II. 456; Hf. Ind. Fl. I. 252. (*B. aquatica*, Roxb. Corom. Pl. II. t. 142).

HAB. Ava (Wall.); Pegu, Rangoon. Fl. R. S.; Fr. C. S.

2. *B. AMMANNIOIDES*, Roxb. Fl. Ind. II. 457; Hf. Ind. Fl. I. 251. (*Elatine ammannioides*, WA. Prod. I. 41; Wight Ill. t. 25. A. and Suppl. 48. t. 28.).

HAB. Frequent all over Pegu in rice-fields, along river-banks, etc.; Tenasserim, Tavoy (Wall.). Fl. R. S.; Fr. C. S.

### **Myriophyllum, L.**

#### *Conspectus of species.*

Carpels almost smooth, about  $\frac{1}{2}$  lin. long, only at base connate, the back obtuse, ... *M. tetrandrum*.

Carpels tubercled and muricate, sometimes almost echinate, wholly connate, about a line long, the back sharply angled, ... *M. tuberculatum*.

1. *M. TETRANDRUM*, Roxb. Fl. Ind. I. 451; DC. Prod. III. 69; W. A. Prod. I. 339; Miq. Fl. Ind. Bat. I. 634; Griff. Not. Dicot. 686. t. 644. f. 5.

HAB. Frequent in swamps and stagnant waters of the alluvial lands of Pegu; Chittagong, in ponds. Fl. Fr. Oct. to Jan.

2. *M. TUBERCULATUM*, Roxb. Fl. Ind. I. 471; DC. Prod. III. 69; Miq. Fl. Ind. I. 635. (*M. Indicum*, Griff. Not. Dicot. 687.)

HAB. Chittagong, in ponds. Fl. Fr. Oct.—Decb.

### **Ceratophyllum, L.**

1. *C. DEMERSUM*, L. sp. pl. 1409; DC. Prod. III. 73; Bth. Fl. Austr. II. 491.

Var.  $\alpha$ . *DEMERSUM*, (*C. demersum*, L. l. c), nuts smooth.

Var.  $\beta$ . *TUBERCULATUM*, (*C. tuberculatum*; Cham. in Linnæa IV. 504. t. 5. f. 6. d.; WA. Prod. I. 309; Miq. Fl. Ind. Bat. I. 799; Wight Ic. t. 1948. f. 3.; *C. verticillatum*, Roxb. Fl. Ind. III. 624).

HAB. Only var.  $\beta$ . not uncommon in ponds and stagnant waters of Chittagong; also in choungs and lakes of Pegu. Fr. Decb. Jan.

### **HYPERICINEÆ.**

#### *Conspectus of genera.*

*Trib. I. HYPERICEÆ.* Capsules dehiscing septicidally. Seeds not winged.

1. *HYPERICUM*. Flowers 5-merous. Herbs or shrubs.

*Trib. II. CRATOXYLEÆ.* Capsules dehiscing loculicidally or sometimes both loculicidally and septicidally. Seeds winged.

2. *CRATOXYLON*. Flowers 5-merous. Stamens 3-adelphous. Ovules 4 or more to the cell.



**Hypericum. L.***Conspectus of species.*

- \* Shrubs with large flowers. Ovary 5-celled. Capsules 5-valved.  
 Stems terete or nearly so; styles 5, free, shorter than the ovary, ... *H. Leschenaultii*.  
 \* \* Herbs with small flowers. Ovary 3-celled. Capsules 3-valved.  
 Stems terete; sepals glandular-ciliate, ... .. *H. elodeoides*.  
 \* \* \* Herbs. Ovary 1-celled. Flowers small.  
 Stems 4-angular; sepals entire, ... .. *H. Japonicum*.

1. *H. LESCHENAULTII*, Chois in DC. Prod. I. 542; Deless. Icon. Select. III. 17. t. 27. (*H. triflorum*, Bl. Bydr. 142; *H. oblongifolium*, Hook. Bot. Mag. t. 4949; *H. Hookerianum*, WA. Prod. I. 99; Wight Ic. t. 949; Hf. Ind. Fl. I. 254).

HAB. Martaban, on and near the top of Nattoung, along the borders of the stunted hill forests, at 7000-7200 ft. elevation. Fr. March.

2. *H. ELODEOIDES*, Chois in DC. Prod. I. 551; Hf. Ind. Fl. I. 255. (*H. sp.* Griff. Not. Dicot. 539. t. 605. f. 1.)

HAB. Ava, (Griff.) Khakyen hills, Ponsee (J. Anderson). Fl. Aug. and March.

3. *H. JAPONICUM*, Thbg. Fl. Jap. 195. t. 31; Royle Ill. Him. Pl. t. 24. f. 2; Hf. Ind. Fl. I. 256.

HAB. Ava, Khakyen hills (J. Anderson); Martaban, Yoonzeleen, at 2500 ft. elevation (Brandis); Tenasserim (Helf. 837). Fl. March.

**Cratoxylon. Bl.***Conspectus of species.*

- Subg. 1. *Tridesmia*, Spach. Petals furnished at base with a scale.  
 All parts glabrous, ... .. *C. formosum*.  
 Leaves beneath, pedicels and sepals pubescent, ... .. *C. pruniflorum*.

Subg. 2. *Ancistrolobus*, Spach. Petals without a basal scale.

- \* Flowers in axillary poor cymes or solitary.  
 Leaves thin chartaceous, acute or blunt; hypogynous glands present or absent,  
 ... .. *C. polyanthum*.

- \* \* Flowers in terminal panicles.  
 Leaves linear-oblong, usually almost sagittate-produced at base, chartaceous, *C. neriifolium*.  
 Leaves more or less obovate-oblong, coriaceous, ... .. *C. arborescens*.

1. *C. FORMOSUM*, Bth. and Hf. Gen. Pl. I. 166; Hf. Ind. Fl. I. 258. (*Tridesmia formosa*, Korth. in Verb. Nat. Gesch. Bot. 179. t. 37.)

HAB. Rare in the tropical forests of South Andaman. Fl. May.

2. *C. PRUNIFLORUM*, Kurz MS. in Journ. As. Soc. Beng. 1872. 293. (*Tridesmia pruniflora*, Kurz l. c.; *Elodea pruniflora* (errore *prunifolia*) Wall. Cat. 7276; *C. prunifolium*, Dyer in Hf. Ind. Fl. 258).

HAB. Not unfrequent in the Eng forests of Martaban; Ava, on Taong dong; Tenasserim, Moulmein. Fl. Apr. May.





Dyer has changed my name into "*prunifolium*," which was a *calamifolius* on the part of Wallich who autographically corrected it on the label of the plant in H. B. C. into "*pruniflora*," a name at once more suggestive and appropriate, for the full-grown leaves are all but *Prunus*-like.

3. *C. POLYANTHUM*, Korth. Verh. Nat. Gesch. Bot. 175. t. 36; Miq. Fl. Ind. Bot. I/2. 516; Hf. Ind. Fl. I. 257.

Var. *α*. *GENUINUM*, (var. *α*. and *β*. Dyer in Hf. Ind. Fl. I. c.) hypogynous glands present.

Var. *β*. *CARNEUM* (*C. carneum*, Kurz in Pegu Report; *Ancistrolobus carneus*, Wall. ap. Voigt Hort. Calc. 89) hypogynous glands entirely absent.

HAB. Var. *β*. Rather frequent in the hill Eng and drier upper mixed forests of Martaban, up to 3000 ft. elevation; also Tenasserim (Helf. 843); var. *α*. in Tenasserim and the Andamans. Fl. March, Apr. Fr. C. S.

The varieties of this species require re-examination. I believe there are at least two species, the one a tree, the other a shrub.

4. *C. NERIIFOLIUM*, Kurz in Journ. As. Soc. Beng. 1872. 293; Hf. Ind. Fl. I. 257.

HAB. Common in the dry and drier upper mixed forests of Prome and Pegu; also in Martaban and Tenasserim; Chittagong. Fr. C. S.

5. *C. ARBORESCENS*, Bl. Mus. Bot. II. 17; Hf. Ind. Fl. I. 258. (*Hypericum arborescens*, Vhl. Symb. II. 86. t. 43; *C. cuneatum*, Miq. Fl. Ind. Bot. I/2. 517?)

HAB. Tenasserim, Moulmein (Lobb).

### GUTTIFERÆ.

#### Conspectus of genera.

*Trib. I. GARCINIEÆ.* Stigma sessile or on a very short and thick style, peltate or radiately-lobed. Seeds often arillate.

1. *GARCINIA*. Flowers 4- or 5-merous. Sepals often decussate. Stamens united into a fleshy mass or into bundles, or free.

2. *OCHROCARPUS*. Calyx closed in bud, bursting into 2 valves.

*Trib. II. CALOPHYLLÆÆ.* Style elongate, the stigma peltate or 4-cleft. Seeds without arillus.

3. *CALOPHYLLUM*. Ovary 1-celled, with a solitary ovule; style single, with peltate stigma.

4. *KAYEA*. Ovary 1-celled, with 4 ovules; style single, with a 4-cleft stigma.

5. *MESUA*. Ovary 2-celled, with 2 ovules in each cell; style single with a peltate stigma.

### Garcinia, L.

#### Conspectus of species.

*Subg. 1. Garcinia, L.* Flowers 4-merous.



- \* Anthers oblong or ovate, opening by longitudinal slits or pores.
- \* Stamens of male flowers in 4 bundles under the rudimentary ovary. Berries 4- to 10-celled, the stigma radiating-lobed, smooth or nearly so.

Female flowers with staminodes round the ovary; berries on a short peduncle; stigma radiately-lobed and adnate, ... .. *G. Mangostana*.  
 Female flowers without staminodes; berries sessile; stigma large, peltate, slightly lobed, sessile, ... .. *G. cornea*.  
 Flowers on rather long pedicels, nearly 2 in. in diameter; stigma in male flowers large, peltate, entire, ... .. *G. speciosa*.

- \* \* Stamens in 4 polyandrous bundles in a ring round the rudimentary ovary; stigma peltate, discoid, more or less rough from wrinkles or radiating veins. Ovary 2-celled.

Peduncle rather long, bearing 2 or rarely 1 leafy bract, ... .. *G. anomala*.  
 Peduncle short or wanting, without bracts, ... .. *G. Merguensis*.

- \* \* \* Anthers almost sessile on a column or 4-sided fleshy mass seldom dividing into 4 somewhat distinct lobes. Stamens in female flowers in a single complete or interrupted ring. Stigmas tubercled or tubercled-wrinkled. Ovary 4—12-celled.

O Stigma in fruit raised on a short thick style.

Berry convex at top, the style not on a separate nipple, ... .. *G. cowa*.  
 Berry terminated by a nipple-shaped protuberance, ... .. *G. Kydia*.

O O Stigma in fruit quite sessile.

Leaves acuminate or cuspidate, leathery; flowers sessile, ... .. *G. lanceaefolia*.  
 Leaves blunt, succulent when dry thin herbaceous; flowers pedicelled, ... .. *G. succifolia*.

- \* \* Anthers peltate, opening by a circular slit.

Leaves large, coriaceous; female flowers almost sessile, the stigma small, verrucose ... .. *G. elliptica*.

*Subg. 2. Xanthochymus*, Roxb. Flowers 5-merous.

Pedicels about an in. long; flowers expanded, ... .. *G. Xanthochymus*.

Pedicels 3 to 4 lin. long; flowers almost closed, doubly smaller, ... .. *G. dulcis*.

\*1. *G. MANGOSTANA*, L. sp. pl. 635; Roxb. Fl. Ind. II. 618; Hook. Bot. Mag. t. 4847; Hf. Ind. Fl. I. 260.

HAB. Only cultivated, Tenasserim. Fr. May, June.

2. *G. SPECIOSA*, Wall. Pl. As. rar. III. t. 258; Hf. Ind. Fl. I. 260.

HAB. Frequent in the tropical forests of the Andamans; also Tenasserim, Moulmein district. Fl. Febr. Apr.

Wallich's figure above cited very much resembles *G. cornea*. My plants resemble in foliage much more *G. Mangostana*, from which they are readily distinguished by the entire but not lobed stigma of the male flowers. The flowers are very much larger than Wallich figures them, agreeing in size more with the analysed flower on the plate.

3. *G. CORNEA*, L. sp. pl. 561; Roxb. Fl. Ind. II. 629; Wight Ic. t. 105; Hf. Ind. Fl. I. 260.

HAB. Not uncommon in the tropical forests of Martaban and the



southern slopes of the Pegu Yomah above Rangoon; also Tenasserim. Fr. Begin of R. S.

The Burmese plants differ, as it seems constantly, in having the stigma 6-lobed and the ovaries 6-celled.

4. *G. ANOMALA*, Pl. and Trian. in Ann. d. sc. nat. Bot. ser. 4. XIV. 329; Hf. Ind. Fl. I. 266.

HAB. Not uncommon in the damp and dry hill-forests of Martaban E. of Tounghoo, at elevations from 4000 to 6000 ft. Fl. probably Apr. (buds in March).

5. *G. MERGUENSIS*, Wight Ill. 122. and Ic. t. 116; Hf. Ind. Fl. I. 267.

HAB. Tenasserim, Mergui (Griff.)

6. *G. COWA*, Roxb. Fl. Ind. II. 622. (*G. Roxburghii*, Wight Ic. t. 104).

HAB. Chittagong (Roxb.)

7. *G. KYDIA*, Roxb. Fl. Ind. II. 623; Wight Ic. t. 118. (*G. sp.* Griff. Not. Dicot. 609. t. 585. A. f. 12?).

HAB. Frequent in the moister upper mixed and in the tropical forests all over Burmah, from Chittagong, Pegu and Martaban down to Tenasserim and the Andamans. Fl. March to May; Fr. May June.

*G. lobulosa*, Wall. Cat. 4868 from Amherst is *G. Kydia*, the Singapore specimen is quite different but too incomplete for identification.

The Andamanese specimens called in my And. Report *G. purpurea*, will probably turn out to be the same as the Singapore plant, but they are too badly preserved to enable me to give a definite opinion.

8. *G. LANCEAFOLIA*, Roxb. Fl. Ind. II. 623; Wight Ic. 163; Hf. Ind. Fl. I. 263.

HAB. Chittagong hills.

9. *G. SUCCIFOLIA*, Kurz in Journ. As. Soc. Beng. 1872. 293. (*G. Ioniceroides*, T. And. in Hf. Ind. Fl. I. 264).

HAB. Frequent in the swamp forests of the alluvial lands of the Sittang and Irrawaddi rivers. Fl. Apr.

10. *G. ELLIPTICA*, Wall. Cat. 4869; Wight Ill. I. 126 and Icon. t. 120. (*Garcinia heterandra*, Wall. Cat. 4856; Hf. Ind. Fl. I. 265).

HAB. Frequent in the tropical forests of the eastern slopes of the Pegu Yomah and Martaban down to Tenasserim, up to 3000 ft. elevation. Fr. Febr. March.

I consider *G. elliptica*, Wall. Cat. 4869 from Silhet identical with the *G. heterandra* of the same author, but other specimens distributed from the Kew Herbarium look different; in any case it cannot go into *G. Morella*. From the contradictory statements of authors with regard to Wallich's species, one is tempted to believe that much confusion must have occurred



in the distribution. We have in the H. B. C. at least two *Morellas*, the Hindustani one (*G. pictoria*, Roxb.) with a large conspicuous calyx under the fruit, and the Malacca one (Griff. 859) which has very minute sepals. *G. Choisyana*, Wall. ap. Hf. Ind. Fl. I. 268 from Tavoy, is known to me only from a wretched young leaf-branch and the description would agree so far with *G. elliptica* except in the sessile male flowers.

11. *G. XANTHOCHYMUS*, Hf. Ind. Fl. I. 269. (*G. Roxburghii*, Kurz in Pegu Report; *Xanthochymus pictorius*, Roxb. Corom. Pl. III. t. 196 and Fl. Ind. II. 633).

HAB. Frequent in the tropical forests of Martaban and Pegu; also Chittagong, Arracan and Tenasserim; Ava. Fl. March-Apr.; Fr. R. S.

12. *G. DULCIS* (*Xanthochymus dulcis*, Roxb. Corom. Pl. III. t. 270 and Fl. Ind. II. 631; Bot. Mag. t. 3088; Wight Ic. t. 192).

HAB. Rather frequent in the tropical forests of South Andaman and adjacent islands. Fr. March-May; Fr. May, June.

#### *Ochrocarpus*, Thouars.

1. *O. SIAMENSIS*, T. And. in Hf. Ind. Fl. I. 270. (*Calysaccion Siamense*, Miq. in Ann. Mus. Lugd. Bat. I. 209).

HAB. Rather rare in the Eng forests of Martaban; Prome hills (Wall. Cat. 4148, quoad specimen e Prome). Fl. Sept. Oct.

#### *Calophyllum*, L.

##### *Conspectus of species.*

\* Sepals 4, often the 2 inner ones or all petal-like; petals none.

Flowers about 8 lin. across, in peduncled or almost sessile umbel-like cymes... *C. spectabile*.

Flowers small; racemes short and strong, few-flowered, ... *C. amoenum*.

\*\* Sepals 4; petals 4 to 8.

Leaves at both ends acuminate, ... *C. polyanthum*.

Leaves rounded or retuse at the apex, ... *C. inophyllum*.

1. *C. SPECTABILE*, Willd. Mag. Berl. 1811.80; Hf. Ind. Fl. I. 271. (*C. tetrapetalum*, Roxb. Fl. Ind. II. 608).

HAB. Not unfrequent in the tropical forests of the Andamans; also Tenasserim. (Falconer).

2. *C. AMOENUM*, Wall. Cat. 4849; Planch. & Trian. in Ann. d. sc. nat. ser. 4. XV. 263.

HAB. Tenasserim, from Moulmein down to Tavoy. Fr. Febr.

3. *C. POLYANTHUM*, Wall. Cat. 4844; Pl. & Trian. in Ann. d. sc. nat. Bot. 4 ser. XV. 278; Hf. Ind. Fl. I. 274.

HAB. Not unfrequent in the damp hill forests of the Martaban hills, E. of Tounghoo, at 3000 to 4000 ft. elevation.

4. *C. INOPHYLLUM*, L. sp. pl. 732; Wight Ic. t. 77, and Ill. Ind. Bot. Suppl. 35 t. 17; Roxb. Fl. Ind. II. 606; Hf. Ind. Fl. I. 273; Griff. Not. Dicot. 609. (*C. Bitangor*, Roxb. l. c. 607).



**Anneslea, Wall.***Conspectus of species.*

Leaves less coriaceous, bluntish, the nerves distinct; peduncles slender. ... *C. fragrans*.  
 Leaves thick coriaceous, acute, nerves almost obsolete; peduncles very thick, *C. monticola*.

1. *A. FRAGRANS*, Wall. Pl. As. rar. I. 5. t. 5; Griff. Not. Dicot. 567. t. 585. A. f. 17; Hf. Ind. Fl. I. 280.

HAB. Not unfrequent in the Eng forests of Pegu and Prome, and more so in the hill Eng forests of Martaban up to 2000 ft. elevation; also Tenasserim, Moulmein. Fl. March, Apr.

2. *A. MONTICOLA*, Kurz in Journ. As. Soc. Beng. 1873, 59.

HAB. Not unfrequent in the drier hill forests of Martaban at 5000 to 7200 ft. elevation. Fl. Febr. March.

May possibly turn out to be a stunted hill-form of the preceding species.

**Ternstrœmia, L. f.***Conspectus of species.*

\* Anthers apiculate.

Fruiting calyx smooth; berries about  $\frac{1}{2}$  in. thick, ... .. *T. Japonica*.

\* \* Anthers not apiculate.

Fruiting calyx thick and wrinkled; berries about 1—1 $\frac{1}{2}$  in. thick, ... .. *T. Penangiana*.

1. *T. JAPONICA*, Thunbg. in Linn. Trans. II. 335; Hf. Ind. Fl. I. 280. (*Cleyera gymnanthera*, WA. Prod. I. 87; Wight Ic. t. 47; Bedd. Fl. Sylv. t. 91.; *Ternstrœmiacea*, Griff. Not. Dicot. 568. t. 604. f. 1?).

HAB. Common in the damp hill-forests of Martaban at elevations from 3000 to 7200 ft.; Tenasserim, Moulmein. Fl. Apr.

2. *T. PENANGIANA*, Chois. in Mem. Soc. Phys. Génév. XIV. 108; Hf. Ind. Fl. I. 281. (*Erythrochiton Wallichianum*, Griff. Not. Dicot. 565. t. 585. A. f. 7. *T. macrocarpa*, Scheff. Obs. Phyt. 15. & Tydschr. Ned. Ind. 1874. 60-61 in adn.).

HAB. Not unfrequent in the tropical forests of the Andamans; Tenasserim, from Moulmein to Mergui. Fr. Apr. May.

A more careful study of the *Ternstrœmias* will probably shew the validity of Griffith's genus *Erythrochiton*, a name already preoccupied. I am by no means sure that the Griffithian and Wallichian plants are the same. The Burmese specimens agree with the former. Dyer seems to have confounded two very marked species, viz., the wrinkled-sepalled Choisyian plant and the smooth-sepalled *T. coriacea*, Scheff. (Hb. Maingay No. 183 from Malacca).

**Adinandra, Jack.**

1. *A. VILLOSA*, Chois. Mém. Ternst. 24; Hf. Ind. Fl. I. 283.

HAB. Not unfrequent in the open especially the Eng forests of the Irrawaddi zone, Pegu; Tenasserim, Tavoy (Wall.).





HAB. Frequent along the sandy sea-shores in the beach-forests of the Andamans and Tenasserim; also often cultivated in villages. Fr. Apr. May.

**Kayea, Wall.**

I. K. NERVOSA, T. And. in Hf. Ind. Fl. I. 277. (*Mesua nervosa*, Planch. & Trian. in Ann. d. sc. nat. Bot. ser. 4, xv. 307).

HAB. Tenasserim, Moulmein district (Falc.) down to Mergui (Griff.). Fr. Apr.

**Mesua, L.**

1. M. FERREA, L. sp. pl. 734; Wight Ic. t. 118; Roxb. Fl. Ind. II. 605; Hf. Ind. Fl. I. 277. (*M. speciosa*, Chois in DC. Prod. I. 562; Wight Spicil. 27. t. 30 and 31; and Icon. t. 961; *M. pedunculata*, Wight Ic. t. 119).

HAB. Frequent in tropical forests of the Andaman islands and all over Tenasserim; Chittagong. Fl. March; Fr. May, June.

**TERNSTRÆMIACEÆ.**

*Conspectus of genera.*

*Trib. I. TERNSTRÆMIACEÆ.* Anthers basifix. Fruit indehiscent. Seeds usually few. Albumen fleshy, usually scanty. Embryo curved, the cotyledons shorter than the radicle and nearly as broad.

1. ANNESLEA. Ovary half-immersed in the torus. Fruit inferior.

2. TERNSTRÆMIA. Petals united at base. Anthers glabrous. Ovules 2. to 4 in each cell. Fruit superior. Seeds large.

3. ADINANDRA. As preceding, but anthers pilose. Seeds numerous, small.

4. CLEYERA. Petals free or hardly united. Anthers pilose. Ovules many. Fruit superior.

5. EURYA. Flowers dioecious. Petals united at base. Anthers glabrous. Ovules many. Fruit superior.

*Trib. II. SAURAUJÆ.* Anthers versatile. Fruits usually pulpy, rarely almost dehiscent. Seeds numerous, small. Albumen copious. Embryo straight, the radicle longer than the cotyledons.

6 SAURAUJA. Flowers 5-merous, usually hermaphrodite. Styles 3—5.

*Trib. III. GORDONIÆ.* Anthers versatile. Fruit indehiscent or loculicidal. Albumen scanty or none, rarely copious. Embryo curved or straight, the cotyledons large, the radicle short.

× Fruit a dehiscent capsule.

7. SCHIMA. Sepals somewhat unequal. Seeds flat, winged. Radicle inflexed. inferior.

8. GORDONIA. Sepals very unequal. Seeds winged. Radicle superior.

9. CAMELLIA. Sepals very unequal. Outer stamens monadelphous. Seeds few, large, not winged. Radicle superior.

× × Fruit an indehiscent drupe.

10. PYRENARIA. Sepals very unequal. Seeds large. Cotyledons folded or convolute. Radicle inferior.





Seems to differ from *A. dasyantha*, Korth, with which I confounded it in my Pegu Report, by the acute sepals.

**Eurya, Thbg.**  
*Conspectus of species.*

\* Leaves serrulate.

× Leaf-buds quite glabrous.

Branchlets marked by decurrent prominent lines, ... *...E. Japonica.*

× × Leaf-buds pubescent or hirsute; branchlets terete.

A slender pine-like tree; leaves puberulous beneath, acuminate; styles united, *E. acuminata.*

A bushy round-headed tree; leaves membranous, glabrous or nearly so, bluntish caudate; styles free, ... *...E. serrata.*

\* \* Leaves entire or serrulate at apex only.

Young shoots appressed pilose; styles united, ... *...E. symplocina.*

1. *E. JAPONICA*, Thbg. Fl. Jap. 191. t. 25; Bedd. Fl. Sylv. t. 92; Hf. Ind. Fl. I. 284. (*E. Wightiana*, Wight Ill. I. t. 38, non Wall; *E. glabra*, Bl. Mus. II. 109; *E. virens*, Bl. l. c. 112; *E. obovata*, Bl. l. c. 107).

HAB. Frequent in the drier hill-forests of Martaban at 4000 to 7000 ft. elevation; Tenasserim, Moulmein hills. Fl. March.

2. *E. ACUMINATA*, DC. Mém. Ternstr. 26. (*E. Chinensis*, Hf. and Th. Herb. Ind. or, as far as to the specimens with united styles.)

HAB. Rather frequent in the drier hill-forests, especially the pine forests of Martaban at 6000 to 7000 ft. elevation. Fl. Febr.; Fr. Apr.

3. *E. SERRATA*, Bl. Mus. II. 115; Miq. Fl. Ind. Bat. I/2 474. (*E. lucida*, Wall. Cat. 1462; *E. Wallichiana*, Steud. ap. Miq. Fl. Ind. Bat. I/2. 474; *E. Roxburghii*, Wall. Cat. 1463).

HAB. Frequent in the tropical forests of Martaban up to 2000 ft. elevation; Tenasserim, as far South as Tavoy; Pegu, in the tropical forests on laterite above Rangoon. Fr. March.

4. *E. SYMPLOCINA*, Bl. Mus. Bot. II. 114; Hf. Ind. Fl. I. 284. (*E. Wallichiana*, Planch MS.).

HAB. Martaban, in the damp and drier hill forests on the Nattoung mountains at about 7000 ft. elevation. Fl. March.

**Saurauja, Willd.**  
*Conspectus of species.*

\* Calyx densely setose or hispid. Ovary villous.

Flowers large, on short thick pedicels, clustered; leaves more or less spiny-serrate, ... *...S. armata.*

\* \* Calyx smooth. Ovary glabrous.

Leaves pale or tawny mealy-puberous beneath; peduncles long and slender, scaly; styles 5, ... *...S. Panduana.*





HAB. Frequent along the sandy sea-shores in the beach-forests of the Andamans and Tenasserim; also often cultivated in villages. Fr. Apr. May.

Kayea, Wall.

I. K. NERVOSA, T. And. in Hf. Ind. Fl. I. 277. (*Mesua nervosa*, Planch. & Trian. in Ann. d. sc. nat. Bot. ser. 4, xv. 307).

HAB. Tenasserim, Moulmein district (Falc.) down to Mergui (Griff.). Fr. Apr.

Mesua, L.

1. M. FERREA, L. sp. pl. 734; Wight Ic. t. 118; Roxb. Fl. Ind. II. 605; Hf. Ind. Fl. I. 277. (*M. speciosa*, Chois in DC. Prod. I. 562; Wight Spicil. 27. t. 30 and 31; and Icon. t. 961; *M. pedunculata*, Wight Ic. t. 119).

HAB. Frequent in tropical forests of the Andaman islands and all over Tenasserim; Chittagong. Fl. March; Fr. May, June.

TERNSTRÆMIACEÆ.

Conspectus of genera.

*Trib. I. TERNSTRÆMIACEÆ.* Anthers basifix. Fruit indehiscent. Seeds usually few. Albumen fleshy, usually scanty. Embryo curved, the cotyledons shorter than the radicle and nearly as broad.

1. ANNESLEA. Ovary half-immersed in the torus. Fruit inferior.

2. TERNSTRÆMIA. Petals united at base. Anthers glabrous. Ovules 2 to 4 in each cell. Fruit superior. Seeds large.

3. ADINANDRA. As preceding, but anthers pilose. Seeds numerous, small.

4. CLEYERA. Petals free or hardly united. Anthers pilose. Ovules many. Fruit superior.

5. EURYA. Flowers dioecious. Petals united at base. Anthers glabrous. Ovules many. Fruit superior.

*Trib. II. SAURAUJÆ.* Anthers versatile. Fruits usually pulpy, rarely almost dehiscent. Seeds numerous, small. Albumen copious. Embryo straight, the radicle longer than the cotyledons.

6 SAURAUJA. Flowers 5-merous, usually hermaphrodite. Styles 3—5.

*Trib. III. GORDONIÆ.* Anthers versatile. Fruit indehiscent or loculicidal. Albumen scanty or none, rarely copious. Embryo curved or straight, the cotyledons large, the radicle short.

× Fruit a dehiscent capsule.

7. SCHIMA. Sepals somewhat unequal. Seeds flat, winged. Radicle inflexed. inferior.

8. GORDONIA. Sepals very unequal. Seeds winged. Radicle superior.

9. CAMELLIA. Sepals very unequal. Outer stamens monadelphous. Seeds few, large, not winged. Radicle superior.

× × Fruit an indehiscent drupe.

10. PYRENARIA. Sepals very unequal. Seeds large. Cotyledons folded or convolute. Radicle inferior.





Seems to differ from *A. dasyantha*, Korth, with which I confounded it in my Pegu Report, by the acute sepals.

### Eurya, Thbg.

#### Conspectus of species.

\* Leaves serrulate.

× Leaf-buds quite glabrous.

Branchlets marked by decurrent prominent lines, ... *E. Japonica*;

× × Leaf-buds pubescent or hirsute; branchlets terete.

A slender pine-like tree; leaves puberulous beneath, acuminate; styles united, *E. acuminata*.

A bushy round-headed tree; leaves membranous, glabrous or nearly so, bluntish caudate; styles free, ... *E. serrata*.

\*\* Leaves entire or serrulate at apex only.

Young shoots appressed pilose; styles united, ... *E. symplocina*.

1. *E. JAPONICA*, Thbg. Fl. Jap. 191. t. 25; Bedd. Fl. Sylv. t. 92; Hf. Ind. Fl. I. 284. (*E. Wightiana*, Wight Ill. I. t. 38, non Wall; *E. glabra*, Bl. Mus. II. 109; *E. virens*, Bl. l. c. 112; *E. obovata*, Bl. l. c. 107).

HAB. Frequent in the drier hill-forests of Martaban at 4000 to 7000 ft. elevation; Tenasserim, Moulmein hills. Fl. March.

2. *E. ACUMINATA*, DC. Mém. Ternstr. 26. (*E. Chinensis*, Hf. and Th. Herb. Ind. or, as far as to the specimens with united styles.)

HAB. Rather frequent in the drier hill-forests, especially the pine forests of Martaban at 6000 to 7000 ft. elevation. Fl. Febr.; Fr. Apr.

3. *E. SERRATA*, Bl. Mus. II. 115; Miq. Fl. Ind. Bat. I/2 474. (*E. lucida*, Wall. Cat. 1462; *E. Wallichiana*, Steud. ap. Miq. Fl. Ind. Bat. I/2. 474; *E. Roxburghii*, Wall. Cat. 1463).

HAB. Frequent in the tropical forests of Martaban up to 2000 ft. elevation; Tenasserim, as far South as Tavoy; Pegu, in the tropical forests on laterite above Rangoon. Fr. March.

4. *E. SYMPLOCINA*, Bl. Mus. Bot. II. 114; Hf. Ind. Fl. I. 284. (*E. Wallichiana*, Planch MS.).

HAB. Martaban, in the damp and drier hill forests on the Nattoung mountains at about 7000 ft. elevation. Fl. March.

### Saurauja, Willd.

#### Conspectus of species.

\* Calyx densely setose or hispid. Ovary villous.

Flowers large, on short thick pedicels, clustered; leaves more or less spiny-serrate, ... *S. armata*.

\*\* Calyx smooth. Ovary glabrous.

Leaves pale or tawny mealy-puberous beneath; peduncles long and slender, scaly; styles 5, ... *S. Panduana*.



Adult leaves glabrous, except the puberulous midrib; peduncles short, scaly puberulous; stamens about 50; flowers lazuli-blue, ... .. *S. Roxburghii*.

As preceding, but leaves finely setose-serrate; stamens about 20; flowers said to be white, ... .. *S. tristyla*.

All parts except upper side of leaves covered with long tawny or brown spreading hairs; peduncles short but slender, rusty-hirsute, ... .. *S. macrotricha*.

1. *S. ARMATA*, Kurz in Journ. As. Soc. Beng. 1873. 59. (*S. cerea*, Griff. ap. Dyer in Hf. Ind. Fl. I. 288?).

HAB. Ava, Khakyen-hills, Ponsee (J. Anderson). Fl. Apr.

2. *S. PUNDUANA*, Wall. Pl. As. rar. II. 50; Hf. Ind. Fl. I. 287.

HAB. Not unfrequent in the tropical forests of Martaban at 2000 to 3000 ft. elevation; Ava, Khakyen hills, Ponsee (J. Anderson). Fl. Apr.

3. *S. ROXBURGHII*, Wall. Pl. As. rar. II. 40; Hf. Ind. Fl. I. 287. (*Ternstroemia serrata*, Roxb. Fl. Ind. II. 521).

HAB. Rather frequent in the tropical and damp hill forests along choungs of the Martaban hills, E. of Tounghoo, at 2000 to 6000 ft. elevation; also Chittagong. Fl. Apr. May.

4. *S. TRISTYLA*, DC. Mém. Ternst. 31. t. 7.; Hf. Ind. Fl. I. 287. (*Ternstroemia bilocularis*, Roxb. Fl. Ind. II. 522?).

HAB. Tenasserim (Helf.)

Included on the authority of Dyer. Specimens thus named in HBC. hardly differ from the preceding.

5. *S. MACROTRICHA*, Kurz in Journ. As. Soc. Beng. 1873. 60; Hf. Ind. Fl. I. 287.

HAB. Ava, Khakyen hills, Ponsee (J. Anderson); Durunga, at 1000 ft. elevation (Griff.). Fl. Apr.

### Pyrenaria, Bl.

#### *Conspectus of species.*

\* Bracts large, leafy, dissimilar to the sepals.

Leaves yellowish in a dried state, pubescent beneath, ... .. *P. diospyricarpa*.

\* \* Bracts small, much shorter than the sepals and similarly shaped.

Leaves glabrous, yellowish in a dried state, petioles hardly 2 lin. long, puberulous or glabrous; fruits obovate, waxy-yellow, ... .. *P. camelliaeflora*.

Leaves glabrous, in a dried state liver-coloured; petioles glabrous, 6 to 8 lin. long; fruits globular or elliptical, green, ... .. *P. serrata*.

1. *P. DIOSPYRICARPA*, Kurz in Journ. As. Soc. Beng. 1873. 60.

HAB. Not unfrequent in the stunted and drier hill-forests of Martaban, E. of Toungoo, at 6000 to 7200 ft. elevation. Fl. Fr. March.

2. *P. CAMELLEFLORA*, Kurz in Journ. As. Soc. Beng. 1871. 46; Hf. Ind. Fl. I. 290.

HAB. Frequent in the drier hill-forests of Martaban at elevations from 3000 to 5000 ft., rarely lower down. Fl. March Apr.; Fr. Apr. May.





3. *P. SERRATA*, Bl. Bydr. 1120; Miq. Fl. Ind. Bat. I/2. 493. (*P. attenuata*, Seem. in Bonpl. VII. 49; Linn. Trans. XXII. 340; Hf. Ind. Fl. I. 290.; *P. lanceolata*, T. and B. in Nat. Tydsch. Nat. Ver. Ned. Ind. XXV)  
HAB. Tenasserim, Tavoy (Wall.)

## Schima, Bwdt.

*Conspectus of species.*

- × Peduncles usually very short and stout, usually not longer than the petioles.  
Peduncles short and straight (rarely long in Wall. Cat. 1455 fr. Nepal), usually lenticellate, rather strong, the nerves beneath prominent, the reticulation distinct, leaves glabrous or slightly pubescent beneath, ... .. *Sch. Wallichii*.  
Peduncles 1 in. long, lenticellate; leaves pubescent beneath; the nerves and net-venation prominent and distinct, ... .. *Sch. mollis*.  
Peduncles thick, lenticellate; leaves very coriaceous, glossy above, crenate, on both sides green, the net-venation indistinct, immersed, ... .. *Sch. monticola*.  
Peduncles short and straight, smooth; flowers larger than in *Sch. crenata*; leaves glaucescent beneath, often entire, the lateral nerves prominent, the net-venation obsolete, ... .. *Sch. Noronhæ*.

× × Peduncles elongate, and often slender, always much longer than the petioles, smooth.

- Peduncles slender, usually more or less curved; leaves glaucous beneath, usually crenate-serrate, the nerves and net-venation beneath distinct, ... .. *Sch. oblata*.  
Peduncles strong, but still slender, 1—1½ in. long; leaves very coriaceous, on both sides impressed-reticulate and almost rugulose, entire or crenate, the lateral nerves entirely or nearly impressed; capsules smaller, ... .. *Sch. Bancana*.

1. *SCH. WALLICHII*, Chois. (in Zoll. Cat. 144 ?). *Gordonia Wallichii*, DC. Prod. I. 528; *Gordonia integrifolia*, Roxb. Fl. Ind. II. 572).

HAB. Chittagong; Ava, Khakyen-hills, Ponsee (J. Anderson). Fl. March.

2. *SCH. MOLLIS*, Dyer in Hf. Ind. Fl. I. 288.

HAB. Ava, Taong-dong (Wall. Cat. 1458); Dyer gives Tavoy as a habitat, but this is an error. I fear that it is hardly more than a pubescent variety of the preceding.

3. *SCH. MONTICOLA*, Kurz MS.

HAB. Martaban, on the highest crests of the Nattoung mountains, in the stunted hill forests, at 6000 to 7200 ft. elevation. Fr. March.

May possibly be a hill-form of *Sch. Noronhæ*, but looks very different even structurally. The leaves much resemble those of *Pygeum lucidum*.

4. *SCH. NORONHÆ*, Rwdt. in Bl. Bydr. 129; Korth. Verh. 141. t. 29. f. 21—27; Miq. Fl. Ind. Bat. I/2. 492. (*Gordonia integrifolia*, Roxb. Fl. Ind. II. 572; *Gordonia floribunda*, Wall. Cat. 1457, B only.)

HAB. Frequent in the drier hill-forests of the Martaban hills at 1500 to 4000 ft. elevation, entering also the hill Eng-forests; Tenasserim (Helf. 763). Fl. Febr. March; Fr. March, Apr.



*Schima*, Griff. No. 768 has the peduncles of the above, but the leaves very much resemble those of *Sch. oblata*, I think that they are abnormal and produced after an unusual fall of leaves.

5. *SCH. OBLATA*, Kurz in Journ. As. Soc. Beng. 1870. 65. (*Sch. crenata*, Korth. Verh. Nat. Gesch. 143. t. 29; Hf. Ind. Fl. I. 289; *Gordonia oblata*, Roxb. Fl. Ind. II. 572).

HAB. Pegu, Rangoon; Tenasserim (Helf. 763).

6. *SCH. BANCANA*, Miq. Ann. Mus. Lugd. Bat. IV. 413.

HAB. Tenasserim (Helf. 761); common in the Eng forests of the lower hills of Tenasserim and Martaban, also in the pine forests up to 3000 ft. elevation. (Dr. Brandis.)

The differences between the species of *Schima* are very slight, but the logical consequence of the reduction of any of the above forms would be such a combination as *Sch. Noronhæ* and *Sch. Wallichii*.

### Camellia, L.

#### Conspectus of species.

Subg. 1. *Thea*, L. Stamens of inner series equal in number to the petals.

All parts quite glabrous; flowers large; leaves coriaceous, ... *C. Japonica*.

Subg. 2. *Camellia*, L. Stamens of inner series twice the number of the petals.

Young parts and midrib of the membranous leaves pilose; flowers nodding on a line-long scaly peduncle; filaments villous, ... *C. caudata*.

All parts glabrous; leaves coriaceous; peduncles not scaly; filaments glabrous, ... *C. Thea*.

Glabrous; leaves coriaceous; flowers almost sessile, erect; filaments glabrous, *C. drupifera*.

\*1. *C. THEA*, Lk. in Stend. Nomencl. Bot. (*Thea Chinensis*, L. sp. pl. ed. 1. 515; Sims. Bot. Mag. t. 998; Seem. in Linn. Trans. XII. 349. t. 61; *Thea Bohea* and *T. viridis*, L. sp. pl. ed. 2. 735; *Thea Cochinchinensis*, Lour. Fl. Coch. I. 338; *C. theifera*, Griff. Not. Dicot. IV. 558. t. 601. f. 1 and 3; Trans. Agr. Hort. Soc. Bengal V. t. C.; Hf. Ind. Fl. I. 292).

HAB. Cultivated in Chittagong and Arracan.

2. *C. CAUDATA*, Wall. Pl. As. Rar. III. 336; Griff. Not. Dicot. 559. t. 601. f. 2; Trans. Agri. Hort. Soc. Ind. V. 1838 t. A.; Hf. Ind. Fl. I. 293.

HAB. Not unfrequent in the drier hill-forests of the Martaban hills along choungs, as for instance near the Chinchona plantation on Shan toung gyee toung at about 3500 ft. elevation. Fl. March?

I fear that I am wrong in my identification and, unfortunately, the only two withered flowers met with by me have been lost by the glue-men. It has much larger and shorter acuminate leaves, and the habit of *C. assimilis* as figured by Seemann. It is a small tree with white wood. N. B. *C. Japonica*, L., is often met with in gardens of Europeans.

3. *C. DRUPIFERA*, Lour. Fl. Coch. I. 411; Seem. in Linn. Trans. XXII. 344; Hf. Ind. Fl. I. 293. (*C. Kissi*, Wall. in Asiat. Res. XIII.





429 and Journ. As. Soc. Beng. IV. 48. t. 2. and Fl. As. rar. III. 36. t. 256;  
*C. simplicifolia*, Griff. Not. Dicot. IV. 560. t. 604. f. 2).

HAB. Tenasserim (and Andaman islands ? ?) (Helf. teste Dyer).

### DIPTEROCARPEÆ.

#### *Conspectus of genera.*

*Subord. I. ANCISTROCLADEÆ.* Ovary 2-celled, with a single erect ovule; fruit adnate to the enlarged calyx. Scandent shrubs.

1. *ANCISTROCLADUS.* All the 5 calyx lobes more or less enlarged.

*Subord. II. DIPTEROCARPEÆ.* Ovary 3- rarely 1-celled, with 2 pendulous ovules in each cell. Trees, rarely erect shrubs.

\* Ovary inferior or nearly so, or with a broad base adnate to the calyx-tube: nuts therefore for  $\frac{1}{2}$  to  $\frac{3}{4}$  of their length adnate to the enlarged calyx tube.

2. *ANISOPTERA.* Connective terminating in a bristle or acute gland; 2 of the 5 calyx-lobes enlarging into long wings.

\* \* Ovary free, superior; nuts free, either enclosed in the enlarged calyx-tube or exposed and the calyx tube hardly enlarged.

O Calyx-tube in fruit very enlarged, completely enclosing the nut.

3. *DIPTEROCARPUS.* Two of the calyx lobes enlarging into long wings.

O O Calyx-tube in fruit not or almost not enlarged, the nuts either quite exposed or closely surrounded by the enlarged calyx-wings.

† Calyx-lobes valvate in bud.

4. *PARASHOREA.* Stamens 12—15, the connective mucronulate; calyx-lobes all almost equally enlarging and wing-like, stellately spreading, the nut quite exposed.

† † Calyx-lobes imbricate and usually also twisted in the bud.

× The 3 outer calyx-lobes in fruit longer than the 2 inner ones.

6. *SHOREA.* Corolla-lobes spreading; stamens 35—50 or more; anther-cells blunt, the connective terminating in a bristle or penicellate sharp point.

6. *PENTACME.* Corolla-lobes inflexed at middle and forming a hemispherical closed cup leaving only an opening for the protruding anthers and style; stamens 15; anthers 4-celled, the cells bristly, diverging from the subulate-pointed connective (anthers therefore 5-setose).

× × The outer calyx-lobes in fruit much longer than the 3 inner very small ones.

7. *HOPEA.* Stamens 15; anther-cells entire at top, adnate to the more or less prolonged connective.

× × × All the 5 calyx-lobes in fruit equally enlarged but not longer than the fruit itself.

8. *VATICA.* Stamens 15. Capsules by abortion 1- rarely 2-seeded.

### *Ancistrocladus.* Wall.

#### *Conspectus of species.*

All the 5 lobes of the fruiting calyx equally enlarged, short and coriaceous, stellately spreading, leaves chartaceous, ... .. *C. Griffithii*.

Lobes of fruiting calyx unequal, chartaceous, 1—1½ in. long; leaves of a thicker texture, ... .. *C. Wallichii*.

1. *A. GRIFFITHII*, Planch. in Ann. d. sc. nat. ser. 3. XIII. 318; DC. Prod. XVI. 603; Hf. Ind. Fl. I. 300.





HAB. Common in the swamp-forests and along muddy river banks of Pegu and Martaban down to Tenasserim, chiefly in the alluvial plains. Fl. Fr. Apr. May.

2. *A. WALLICHII*, Planch. in Ann. d. sc. Nat. 3 ser. XIII. 319; Hf. Ind. Fl. I. 300. (*A. extensus*, Wall. Cat. 1052; DC. Prodr. XVI. 602; Hf. Ind. Fl. I. 299; *A. stelligerus*, Wall. ap. DC. Prodr. l. c. 603 ?; *A. sp.* Griff. Nat. Dicot. 568.)

HAB. Frequent in the tropical forests of the Pegu Yomah and Martaban down to Tenasserim and the Andamans; also Chittagong. Fl. Febr. March; Fr. Apr. May.

The wings are described as subequal but all those that I saw were very unequal, and it is possible that *A. Wallichii* of Dyer is the same as *A. Griffithii*. At least several specimens of *A. stelligerus*, Wall. Cat. belong to the latter. Wallich's specimens 1052-2 in HBC. from Silhet, in very unripe fruit only, have the wings unequal. The plants are dimorphophyllous, having elongate leaves 1 to 1½ and 2 ft. long and others hardly 6 in. long on different branches of the same stock flowering at the same time. The panicles, too, vary from robust to slenderly-branched.

#### *Doubtful species.*

1. *A. ATTENUATUS*, Dyer in Hf. Ind. Fl. I. 300.

HAB. Tenasserim and Andaman islands (Helf. 724.)

The specimen in HBC. is in panicle less the flowers and fruits and has the habit of *A. Griffithii*; the fruits, however, as described by Dyer, agree with those ascribed by me to *A. extensus*.

#### **Anisoptera, Korth.**

##### *Conspectus of species.*

*Subg. 1. Synaptea.* Stamens only 15—18, the connective terminated in an acute gland; style filiform; nuts only to about ½ of their length adnate to the calyx-tube.

Young shoots covered by a mealy or scurvy tomentum, ... .. *A. odorata*.

*Subg. 2. Anisoptera.* Stamens numerous, the connective produced into a bristle, style thick and ovoid; nuts inferior or nearly so.

Apparently quite glabrous, ... .. *A. glabra*.

1. *A. ODORATA* (*Synaptea odorata*, Griff. Not. Dicot. 516. t. 685. A. f. 5; *Hopea grandiflora*, Wall. nom. nud.; DC. Prodr. XVI. 634; *Synaptea grandiflora*, Kurz in Journ. As. Soc. Beng. XXXIX. 65; *Vatica grandiflora*, Dyer in Hf. Ind. Fl. I. 301).

HAB. Tenasserim, from Moulmein southwards, not unfrequent.

N. B. *Vatica faginea* Dyer in Hf. Ind. Fl. I. 301 from Mergui seems not to differ from the above as far as the description goes. *Hopea faginea* or, as it is marked in HBC, *Shorea Penangiana*, Wall. Cat. 963, is from Penang and a true *Anisoptera* with quite inferior fruit.





2. *A. GLABRA*, Kurz in Journ. As. Soc. Beng. 1873. 61; Hf. Ind. Fl. I. 301.

HAB. Frequent in the tropical forests of the eastern slopes of the Pegu Yomah and Martaban, E. of Tounghoo. Fr. Apr. May.

3. *A. OBLONGA*, Dyer in Hf. Ind. Fl. I. 301.

HAB. Tenasserim, Mergui (Griff.). Unknown to me, said to differ from the preceding in the unequally prominent nerves of the calyx-wings.

### *Dipterocarpus*, Gærtn. f.

#### *Conspēctus of species.*

\* Calyx-tube in fruit more or less globular, ovoid to turbinate, without any ribs or longitudinal wings on its belly.

O Calyx-tube in fruit towards the top producēd into 5 compressed knobs each situated between 2 lobes.

Leaves glabrous or puberulous beneath; stipules puberulous, ... *D. tuberculatus*.

O O Calyx-tube in fruit perfectly terete.

× Leaves glabrous and glossy.

Stipules velvety; fruiting calyx smooth and more or less pruinous, ... *D. la*

Stipules glabrous; fruiting calyx sprinkled with minute stellate hairs, ... *D. Hassk*

× × Leaves beneath or on both surfaces variously hairy.

Leaves acuminate, beneath along with the petioles pubescent, ... *D. turbinatus*.

All softer parts greyish pubescent, the leaves blunt, ... *D. obtusifolius*.

Leaves acuminate, often large; petioles, young branchlets and stipules strigose from short tawny brush-like fascieled hairs, ... *D. pilosus*.

\*\* Calyx-tube in fruit longitudinally marked by 5 ribs or as many wings.

† Wings of fruiting calyx-tube broad (about half as broad as the belly or broader).

Calyx greyish-tomentose, when in fruit sparingly stellate-puberulous; petioles long; leaves greyish pubescent, ... *D. alatus*.

Calyx pruinous, quite glabrous; petioles only 2—2½ in. long, ... *D. Griffithii*.

†† Wings of the fruiting calyx-tube narrow or reduced to ribs.

O Leaves blunt.

All softer parts greyish-villous, ... *D. incanus*.

O O Leaves acuminate.

Branchlets tomentose, the belly of the calyx narrowly 5-winged and sparingly hairy, ... *D. costatus*.

1. *D. TUBERCULATUS*, Roxb. Fl. Ind. II. 614 and Icon. ined. IX. t. 82; DC. Prod. XVI. 614; Hf. Ind. Fl. I. 297.

HAB. Forming the principal constituent of the Eng and hill Eng forests all over Ava, Prome, Pegu and Martaban down to Tenasserim; also Chittagong. Fl. Apr.; Fr. May.

2. *D. LEVIS*, Ham. in Wern. Soc. Trans. VI. 299; DC. Prod. XVI. 607. (*D. turbinatus*, Roxb. Corom. Pl. III. 3. t. 213 and Fl. Ind. II. 612; *D. grandiflorus*, Griff. Not. Dicot. 515.)

HAB. Frequent all over Burma from Arracan, Pegu and Martaban down to Tenasserim. Fl. Apr.; Fr. May.



3. *D. HASSELTII*, Bl. Fl. Jav. Dipt. 22. t. 6; DC. Prod. XVI. 609.

HAB. In the tropical forests of the Andaman Islands and Tenasserim. Differs from the preceding solely in the glabrous stipules and not-pruinous calyx-belly.

Maingay's Malayan plant No. 199 belongs here. Dyer (in Trim. Journ. Bot. 1874. p. 102) incorrectly refers the species to *D. trinervis*.

4. *D. TURBINATUS*, Gärtn. f. Fruct. III. 51. t. 588; DC. Prod. XVI. 607 quoad diagn. Ham; Dyer. in Trim Journ. Bot. 1874. t. 143. f. 13.

HAB. Frequent in the tropical forests of the eastern slopes of the Pegu and Arracan Yomah and Martaban down to Tenasserim; also Chittagong. Fl. Apr.; Fr. May.

Fruits resemble those of *D. Hasseltii*, leaves those of *D. alatus*. Gärtner's figure is very characteristic, representing a not full-grown fruit.

5. *D. OBTUSIFOLIUS*, Teysm. in Miq. Ann. Mus. Lugd. Bat. I. 214; DC. Prod. XVI. 608; Hf. Ind. Fl. I. 895.

HAB. Common in the hill Eng forests of Martaban and in the Eng forests of the Prome District up to 1500 ft. elevation. Fl. March, Apr.; Fr. Apr. May.

6. *D. PILOSUS*, Roxb. Fl. Ind. II. 615; DC. Prod. XVI. 614; Hf. Ind. Fl. I. 296.

HAB. In the damp hill and tropical forests of the Martaban hills, E. of Tounghoo down to Tenasserim, up to 3500 ft. elevation; also Chittagong, Mascal island (Roxb.).

7. *D. ALATUS*, Roxb. Fl. Ind. II. 614; DC. Prod. XVI. 611. (*D. incanus*, Dyer in Hf. Ind. Fl. I. 298, vix Roxb.).

HAB. Frequent in the tropical forests of Pegu and Martaban down to Tenasserim; also in Arracan. Fl. Apr. May; Fr. May.

8. *D. GRIFFITHII*, Miq. in Ann. Mus. Lugd. Bat. I. 213; Hf. Ind. Fl. I. 299.

HAB. In the tropical and moister upper mixed forests of the Andamans; Tenasserim, Mergui (Griff.). Fr. May.

9. *D. INCANUS*, Roxb. Fl. Ind. II. 615; DC. Prod. XVI. 614.

HAB. Chittagong. Fl. Nov. Dec.; Fr. Apr.

A very doubtful species which indeed comes very near to *D. alatus* according to the description, although it is not likely that Roxburgh should have named the same species twice over.

10. *D. COSTATUS*, Gärtn. Fruct. III. 50. t. 187; DC. Prod. XVI. 610. (*D. gonopterus*, Turcz. in Bull. Soc. Mosc. 1863. I. 576?; DC. Prod. XVI. 612?).

HAB. Frequent in the hill Eng forests of the Martaban hills and in Upper Tenasserim; up to 2000 ft. elevation. Fr. Apr.

Dyer correctly remarks that *D. costatus* in Gärtn. Fruct. is a bad



representation of *D. alatus*; but it is a faithful delineation of what I formerly identified (and I still believe correctly) with *D. gonopterus*, Turcz. I have not seen *D. scaber*, Ham. which is described as clothed with fascicled brown hairs.

*Doubtful species.*

1. *D. VESTITUS*, Wall. Cat. 954; Hf. Ind. Fl. I. 295.

HAB. Tenasserim, Tavoy (Gomez).

Not seen by me but seems allied to, if not identical with, *D. turbinatus*, apparently differing by the calyx-lobes all short broadly deltoid (not 2-elongate).

2. *D. SCABER*, Ham. in Mem. Wern. Soc. VI. 300; Hf. Ind. Fl. I. 297.

HAB. Hills of southern Tippera (Ham).

3. *D. ANGUSTIFOLIUS*, WA. Prod. I. 84. (*D. costatus*, Roxb. Fl. Ind. II. 613).

HAB. Chittagong Hills.

*Parashorea*, Kurz.

1. *P. STELLATA*, Kurz in Journ. As. Soc. Beng. 1870, 66. (*Shorea stellata*, Dyer in Hf. Ind. Fl. I. 304).

HAB. Frequent in the tropical forests of Martaban; rather rare along the eastern slopes of the Pegu Yomah, up to 1500 ft. elevation. Fl. March; Fr. Apr. May.

The generic distinctions of *Parashorea* do not consist in the development of the fruit-wings but in the æstivation of the calyx and the entirely exposed nut.

*Shorea*, Roxb.

*Conspectus of species.*

\* Inflorescence tomentose or velvety-pubescent.

✕ Leaves chartaceous, when full-grown glabrous or nearly so.

Shorter calyx-lobes in fruit acuminate; stamens c. 20—25, ... *S. obtusa*.

Shorter calyx-lobes in fruit blunt; stamens about 50, ... *S. robusta*.

✕ ✕ Leaves very coriaceous, appressed silvery beneath.

Incompletely known; leaves apparently persistent, ... *S. Helferi*.

\*\* Inflorescence quite glabrous.

Calyx quite glabrous, ... *S. floribunda*.

1. *S. OBTUSA*, Wall. Cat. 966; Bl. Mus. Lugd. Bat. II. 32. t. 8; Hf. Ind. Fl. I. 306.

HAB. Common in the Eng and hill Eng forests all over Burma from Ava, Prome and Martaban down to Tenasserim, up to 2000 ft. elevation. Fl. March; Fr. Apr. May.



2. *S. ROBUSTA*, Gartn. Fr. III. 48 t. 186; Roxb. Corom. Pl. III. t. 212 and Fl. Ind. II. 615; Bedd. Fl. Sylv. Madr. t. 4.; Hf. Ind. Fl. I. 306.

HAB. Said to grow in Ava.

3. *S. HELFERI* (*Vatica Helferi*, Dyer in Hf. Ind. Fl. I. 302).

HAB. Tenasserim, Mergui (Griff. 716/1).

Referred here on account of habit.

There is another *Shorea*, in leaf only, very much resembling *Durio Oxleyanus* from Tenasserim, Moulmein (Falc. 438), which differs from *Sh. leprosula* in having the upper side of the leaves not scabrous and generally in the different clothing and nervation.

4. *SH. FLORIBUNDA*, Kurz in Journ. As. Soc. Beng. 1873. 60; Hf. Ind. Fl. I. 304.

HAB. Tenasserim, Tavoy. Fl. Decb.

#### Pentacme, DC.

1. *P. SIAMENSIS*, Kurz in Journ. As. Soc. Beng. 1870, 66. (*Shorea Siamensis*, Miq. Ann. Mus. Lugd. Bat. I. 214; Hf. Ind. Fl. I. 384).

HAB. Very frequent in the Eng and dry forests more especially in Ava and the Prome ditrict, less frequent from Pegu and Martaban down to Tenasserim. Fl. March; Fr. Apr. May.

The Siamese specimens have the young leaves beneath white-tomentose, but differ in no other respect.

#### Hopea, Roxb.

##### Conspectus of species.

\* Connective terminated by a short point.

Calyx greyish tomentose; leaves bluntish acuminate, ... *H. odorata*.

Leaves oblong, blunt, ... *H. scaphula*.

\* \* Connective terminated by a bristle longer than the anther-cells.

Calyx greyish tomentose; flowers somewhat larger, ... *H. gratissima*.

Calyx almost glabrous; flowers very small, ... *H. Griffithii*.

1. *H. ODORATA*, Roxb. Corom. Pl. III. t. 210 and Fl. Ind. II. 609. Hf. Ind. Fl. I. 308. (*H. vasta*, Wall. ap. DC. Prod. XVI. 633).

HAB. Common in the tropical forests all over Burma from Chittagong and Martaban down to Tenasserim. Fl. March, Apr.; Fr. May, June.

NB. *Hopea eglandulosa*, Roxb. is a *Cyclostemon* and differs from the above by the white bark as indicated by Roxburgh himself.

2. *H. SCAPHULA*, Roxb. Fl. Ind. II. 611; DC. Prod. XVI. 635. (*Vatica scaphula*, Dyer in Hf. Ind. Fl. I. 301).

HAB. Chittagong, on Mascal Island (Roxb.). Fl. Jan.

3. *H. GRATISSIMA*, Wall. Cat. 960; Kurz in Journ. As. Soc. Beng. 1873. 61. (*H. oblongifolia*, Dyer in Hf. Ind. Fl. I. 309?; *Shorea gratissima*, Dyer l. c. 307).





HAB. Tenasserim (Griff. 714/1).

4. H. GRIFFITHII, Kurz in Journ. As. Soc. Beng., 1873, 60; Hf. Ind. Fl. I. 310.

HAB. Tenasserim, Mergui (Griff.). 717/1).

#### Vatica, L.

1. V. LANCEÆFOLIA, Bl. Mus. Lugd. Bat. II. 31; DC. Prod. XVI. 618; Hf. Ind. Fl. I. 302. (*Vateria lanceaefolia*, Roxb. Fl. Ind. II. 601).

HAB. Chittagong (Roxb.); Burma (Griff.). Fl. May; Fr. Jul. Aug.

#### Doubtful species.

1. V. TRIGYNA, Griff. Not. Dicot. 514.

HAB. Tenasserim, Mergui, on the summit of the hillock Pator, at 600—800 ft. elevation (Griff.).

Griffith's description is a very complete and good one, but still I cannot guess the plant. The ovary-like style would indicate *Anisoptera*, but the ovary itself is stated to be superior and free.

### MALVACEÆ.

#### Conspectus of genera.

A. Carpels whorled in a single row, not united into a capsule.

Trib. I. MALVEÆ. Staminal column bearing the filaments at the summit. Style-branches as many as cells to the ovary. Mature carpels separating more or less from the axis.

\* Ovules solitary, ascending.

× Stigmas linear.

1. ALTHÆA. Bracteoles 6—9, united at base; fruit-axis not longer than the carpels.

2. MALVA. Bracteoles 3, distinct. Carpels not beaked.

× × Stigmas capitate or clavate.

3. MALVASTRUM. Bracteoles 1 to 3, distinct, or none. Carpels usually beaked.

\* \* Ovules suspended, solitary.

4. ANODA. Bracteoles none. Carpels broadly stellate, not beaked.

5. SIDA. Carpels converging with their points or beaked. Bracteoles none, or very rarely 1 or 2 and bristle-like.

\* \* \* Ovules 2 or more, ascending or pendulous or both.

6. ABUTILON. Bracteoles none. Carpels 5—20, without spurious partitions.

Trib. II. URENEÆ. Staminal column truncate or 5-toothed at apex bearing the anthers or filaments on the outside. Style-branches twice as many as ovary-cells. Carpels 1-seeded.

7. URENA. Bracteoles 5, connate at base. Carpels opposite the petals, muricate or glochidiate.

8. PAVONIA. Bracteoles 5 or more, usually free, herbaceous or bristle-like. Carpels opposite the sepals, variously armed or smooth.

B. Fruit a capsule, dehiscent or rarely indehiscent.



*Trib. III. Hibiscæ.* Staminal column truncate or 5-toothed at summit, bearing the anthers or filaments outside or also on the summit itself. Style-branches or stigmas as many as ovary-cells.

O Style branched at the summit, the branches spreading or radiating. Seeds usually reniform.

9. *KYDIA.* Bracteoles 4—6, enlarging in fruit. Capsule 2- or 3-valved.

10. *DECASCHISTIA.* Bracteoles 10. Ovary, 10-celled, with a solitary ovule in each cell.

11. *HIBISCTA.* Bracteoles 5 or more, free or connate, rarely tooth-like or wanting. Ovary 5-celled, with 2 or more ovules in each cell.

O O Stigmas clavate, undivided or very shortly and erect-branched. Seeds obovoid or angled.

12. *THESPERIA.* Bracteoles 3 to 5, usually small.

13. *GOSYPIUM.* Bracteoles 3, leafy, large, cordate.

*Trib. IV. Bombacæ.* Staminal column divided at summit, or rarely to the base, into numerous filaments or 5 to 8 staminal bundles, very rarely entire nearly to the summit. Anthers free or variously cohering. Stigmas free or connate.

\* Leaves digitate. Bracteoles distinct or none.

14. *BOMBAX.* Calyx truncate or irregularly 3- to 5-lobed. Capsule 5-valved, copiously woolly within. Ultimate filaments with a single anther.

15. *ERIODENDRON.* Calyx and capsule as in preceding. Filaments with 2 or 3 anthers.

\*\* Leaves simple, penninerved, beneath more or less lepidote. Fruits muricate.

16. *DURIO.* Calyx bell-shaped. Petals 5. Branches of the staminal bundles bearing several linear anthers with sinuous anther-cells.

### **Althæa, L.**

1. *A. ROSEA*, Cav. Diss. t. 29. f. 3; Roxb. Fl. Ind. III. 180; DC. Prod. I. 437; Bot. Mag. t. 3189. (*A. Coromandeliana*, Cav. l. c. 293; WA. Prod. I. 45; *A. flexuosa*, Sims Bot. Mag. t. 892; *A. Sinensis*, Cav. l. c. t. 29. f. 3; DC. l. c.).

HAB. In gardens both of natives and of Europeans, more especially in the drier districts, as Prome, also Ava, Khakyen hills, Pongee (J. Anderson). Fl. March.

### **Malva, L.**

1. *M. VERTICILLATA*, L. sp. pl. 970; Hf. Ind. Fl. I. 320; Engl. Bot. t. 2953; Hook. Journ. 1847. t. 7. (*M. Neilgherrensis*, Wight l. c. t. 950).

HAB. Ava, Khakyen hills, Pongee (J. Anderson). Fr. May.

### **Malvastrum, A. Gray.**

\*1. *M. TRICUSPIDATUM*, A. Gray Bot. Amer. Exp. I. 148; Hf. Ind. Fl. I. 321. (*M. rudicale*, Miq. Fl. Ind. Bat. 1/2 138).

HAB. In rubbishy places near Chittagong; also one specimen seen in Rangoon. Fl. R. S.



## Sida, L.

## Conspectus of species.

- \* Leaves from lanceolate to oblong or obovate-oblong, on short 2 to 4 lin. long petioles.
- Carpels usually 5, leaves more or less green on both sides; peduncles short, not or at the very base jointed. ... *S. carpinifolia*.
- Carpels usually 10, seldom fewer, leaves minutely greyish tomentose beneath; peduncles usually elongate, jointed at about their middle, ... *S. rhombifolia*.
- \* \* Leaves cordate or nearly so, on 6 to 15 lin. long, usually slender petioles.
- O Carpels terminating in 2 long awns.
- Erect, glabrous or nearly so, ... *S. corylifolia*.
- Erect, densely tomentose, ... *S. cordifolia*.
- O O Carpels blunt or shortly 2-lobed.
- Erect; hairs glandular or viscid; flowers solitary or several, on short and rather thick glandular peduncles, ... *S. glutinosa*.
- Spreading or almost erect, weak; hairs spreading, not glandular; flowers solitary, on long filiform jointed simply hairy peduncles, ... *S. humilis*.

1. *S. CARPINIFOLIA*, L. sp. pl. 963; Hf. Ind. Fl. I. 323. (*S. acuta*, Burm. Fl. Ind. 147; Roxb. Fl. Ind. III. 171; Wight Ic. t. 95; *S. lanceolata*, Roxb. l. c. 175).

HAB. Very frequent, especially in rubbishy places, in cultivated grassy lands, shrubberies, etc., all over Burmah; Andamans, introduced only. Fl. R. and C. S.

2. *S. RHOMBIFOLIA*, L. sp. pl. 961; Roxb. Fl. Ind. III. 176; Hf. Ind. Fl. I. 323.

Var.  $\alpha$ . LINNEANA, Griseb. Fl. West. Ind. 74.

Var.  $\beta$ . CANARIENSIS, Griseb. l. c. 74. (*S. rhomboidea*, Roxb. Fl. Ind. III. 176; *S. rhombifolia* var. 3 *rhomboidea*, Mast. in Hf. Fl. Ind. I. 324 pp.)

Var.  $\gamma$ . RETUSA, Griseb. l. c.; Mast. l. c. (*S. retusa* L. sp. pl. 961; Roxb. Fl. Ind. III. 175).

Var.  $\delta$ . ACUTA; erect, branched; leaves oblong-lanceolate, acuminate, toothed; carpels 6—7, stellate pubescent, with 4 long awns.

Var.  $\epsilon$ . ALNIFOLIA (*S. alnifolia*, Roxb. Fl. Ind. III. 174; WA. Prod. I. 58, an etiam L?; *S. Chinensis*, Roxb. l. c.; *S. microphylla*, Roxb. l. c. 170?; *S. Philippica*, DC. Prod. I. 462).

HAB. Very frequent in leaf-shedding forests and in cultivated lands all over Burma; var.  $\delta$ . *Tenasserim*. Fl. Fr. C. and R. S.

3. *S. CORYLIFOLIA*, Wall. Cat. 1865; Hf. Ind. Fl. I. 324.

HAB. Ava, Segain (Wall.).

4. *S. CORDIFOLIA*, L. sp. pl. 961; Roxb. Fl. Ind. III. 177; Hf. Ind. Fl. I. 324; (*S. decagyna*, Schum. and Thon. Dansk. Vidensk. Selsk. Aft. IV. 12; Walp. Rep. I. 315).



HAB. Not unfrequent on sandy soil chiefly, as well in the leaf-shedding forests as in shrubberies of the lower lands of Pegu and Arracan. Fl. Fr. Oct. Decb.

5. *S. GLUTINOSA*, Roxb. Fl. III. 172. (*S. Mysurensis*, WA. Prod. I. 59; Hf. Ind. Fl. I. 322).

HAB. Frequent in the mixed and open forests all over Pegu and Martaban; also Tenasserim and Ava, Khakyen hills. Fl. Fr. Febr., May.

6. *S. HUMILIS*, Willd. sp. pl. III. 744; Roxb. Fl. Ind. Fl. I. 322.

HAB. Frequent all over Pegu, more especially in the Prome District, in leaf-shedding forests and rubbishy places; also Ava. Fl. Fr. Oct. March.

### Albutilon, Gærtn.

#### *Conspectus of species.*

\* Carpels more than 10, usually about 20.

Tomentum close and dense, without spreading hairs; capsule truncate, the carpel-points very short, ... *A. Indicum*.

Tomentum dense, intermixed with long spreading hairs; capsule at the top contracted and angular, the carpels not pointed, ... *A. graveolens*.

\* \* Carpels fewer than 10, usually 5 or 7.

Tomentum consisting of short glandular hairs, intermixed with long simple and spreading ones, ... *A. polyandrum*.

1. *A. INDICUM*, G. Don. Gen. Syst. I. 504; Wight Ic. t. 12; Hf. Ind. Fl. 325. non Miq. Fl. Ind. Bat. (*Sida Indica* L. sp. pl. 964; Roxb. Fl. Ind. III. 179; *Sida populifolia*, Roxb. Fl. Ind. III. 179; *Sida Asiatica*, L. sp. pl. 964; Roxb. Fl. Ind. III. 179; Hf. Ind. Fl. I. 326).

HAB. Frequent along road sides, around villages, along the banks of rivers, etc., all over Prome and Pegu; also Ava. Fr. Decb. Jan.

2. *A. GRAVEOLENS*, WA. Prod. I. 56; Hook. Comp. Bot. Mag. I. t. 2; Hf. Ind. Fl. I. 327. (*Sida graveolens*, Roxb. Fl. Ind. II. 179; Bot. Mag. t. 4134).

HAB. In uncultivated places, amongst shrubbery etc., especially around villages in Pegu. Fl. CS.; Fr. H. S.

3. *A. POLYANDRUM*, Schlecht. in Link En. Hort. Berol. II. 264; Hf. Ind. Fl. I. 325. (*Sida polyandra*, Roxb. Fl. Ind. III. 173; *Sida Persica*, Burm. Fl. Ind. t. 47. f. 1; Cav. Diss. I. t. 4. f. 1).

HAB. Pegu (Brandis).

The Burmese plant differs chiefly in the more glandular pubescence and in having the carpels constantly by 7, not by 5.

#### *Doubtful species.*

1. *SIDÆ*, sp. Griff. Not. Dicot. 523.

HAB. Tenasserim, Moulmein, in jungles and along roads.



**Urena, L.***Conspectus of species.*

\* Capsules longer than the sepals, glochidiate and bristly tomentose,

... *U. lobata*.

\* \* Carpels included in the calyx, smooth or net-veined.

O Petals  $1\frac{1}{2}$  to nearly 2 in. long, forming a large funnel-shaped corolla.

Leaves almost rotundate, very scabrous on both surfaces; flowers forming dense leafy terminal heads, ... *U. rigida*.

Leaves underneath softly tomentose, scabrous above, the lower ones usually lobed; flowers in loose spreading terminal racemes, ... *U. speciosa*.

O O Petals about 4 lin. long, forming a rotate corolla; involucre longer than the calyx.

Flowers sessile or nearly so in the axils of the leaves, or along axillary short leafy branchlets, ... *U. repanda*.

1. *U. LOBATA*, L. sp. pl. 974; Roxb. Fl. Ind. III. 182; Bot. Mag. t. 3043; Griff. Not. Dicot. 522; Hf. Ind. Fl. I. 329. (*U. reticulata*, Cav. Diss. VI. 335 t. 183. f. 1.; *U. viminea*, Cav. l. c. t. 184. f. 1; *U. microcarpa*, DC. Prod. I. 441; *U. ribesia*, Sm. in Rees. Cycl. 37. No. 5; DC. l. c.; *U. Swartzii*, DC. l. c.; *U. scabriuscula*, DC. l. c.).

Var.  $\beta$ . *SINUATA* (*U. sinuata*, L. sp. pl. 974; Roxb. Fl. Ind. III. 182; Hf. Ind. Fl. I. 329).

Var.  $\gamma$ . *LANOSA*, leaves larger, usually with shorter lobes and less scabrous, sometimes almost softly tomentose; involucre and calyx rather flaccid, densely tomentose.

HAB. All three forms common, especially in uncultivated places, in shrubberies, toungyas, etc., but also in leaf-shedding forests all over Burma from Chittagong and Ava down to Tenasserim up to 3000 ft. elevation; Var.  $\alpha$ . rarer than  $\beta$ . and  $\gamma$ . Fl. Fr.  $\infty$ .

2. *U. RIGIDA*, Wall. Cat. 1929; Hf. Ind. Fl. I. 330.

HAB. Not uncommon in the open, especially the low, forests of Pegu and Martaban; also Tenasserim, chiefly on stiff clay and laterite. Fl. Oct. to Jan.

3. *U. SPECIOSA*, Wall. Pl. As. rar. I. t. 26.

HAB. Not unfrequent in the low and mixed forests all over Pegu; also Ava. Fl. Fr. C. S.

**Pavonia, Cav.***Conspectus of species.*

Sect. 1. *Lebretonia*. Bracteoles 5-6. Carpels indehiscent.

Flowers yellow; carpels muricate, ... *P. glechomifolia*.

Sect. 2. *Eupavonia*. Bracteoles 10 or more. Carpels dehiscent.

Flowers pink; carpels unarmed, the margins slightly but sharply produced, *P. zeylanica*.

1. *P. GLECHOMIFOLIA*, A. Rich. Fl. Abyss. I. 54; Hf. Ind. Fl. I. 330. (*Lebretonia procumbens*, Wall. Cat. 1883; Wight Ic. t. 4).





HAB. Ava. Segain. (Wall.).

2. *P. ZEYLANICA*, Willd. sp. pl. III. 838; Roxb. Fl. Ind. III. 214; Hf. Ind. Fl. I. 331.

HAB. Banks of the Irrawaddi in Ava, apparently not unfrequent.—Fl. Fr. Sept.—Jan.

All the Burmese specimens seen by me (including *P. rosea*, Wall. Cat. 1887, with hairy carpels) belong to the above species, none to *P. odorata*, Willd., for which Masters gives Birma as a habitat.

### Kydia. Roxb.

1. *K. CALYCINA*, Roxb. Corom. Pl. III. t. 215 and Fl. Ind. III. 188; Wight Ic. t. 879-880; Bedd. Fl. Sylv. t. 3.; Hf. Ind. Fl. I. 348. (*K. fraterna*, Roxb. Corom. Pl. III. t. 216 and Fl. Ind. III. 189).

HAB. Not uncommon in the mixed and open forests of Pegu and Prome; also Ava. Fl. Jan.; Fr. H. S.

There really may be two different species in India, the one with smaller smooth seeds, the other with larger furrowed seeds. The indument of the Burmese plants is much more floccose, the involucre-leaflets broader; seeds, unripe, appear smooth and smaller.

### Decaschiſtia. WA.

#### Conspectus of species.

Leaves beneath shortly but densely whitish tomentose; involucre much shorter than the calyx, puberulous; petals about  $\frac{1}{2}$  in. long, ... *D. parviflora*.  
All parts thickly tomentose; involucre nearly as long as the calyx, densely tomentose; petals nearly 2 in. long, ... *D. crassiuscula*.

*D. PARVIFLORA*, Kurz in Journ. As. Soc. Beng. 1870. 66.

HAB. Found in the adjoining Siamese province of Kanburi, most probably occurring also in Tenasserim. Fl. Fr. Apr. May.

1. *D. CRASSIUSCULA*, Kurz in Journ. As. Soc. Beng. 1873. 227.

HAB. Prome District (Col. Eyre).

Masters describes but does not name another large-flowered (flowers pink, 4 in. in diameter) species from Rangoon.

### Hibiscus. L.

#### Conspectus of species.

A. Leaflets of involucre free, sometimes adnate to the calyx but not connate with one another, or altogether wanting.

Subg. 1. *Solandra*. Involucre wanting. Herbs with small flowers.

Flowers white, on long slender pedicels, usually forming terminal racemes, ... *H. Solandra*.

Subg. 2. *Hibiscus*. Calyx regular, not spathaceous, 5-cleft, more or less persistent, surrounded by a more or less persistent involucre, the leaflets of which are either quite free or sometimes adnate to the calyx.

\* Capsule rounded, obtuse or truncate.

O Capsules truncate, winged.



Velvety-pubescent; calyx and involucre tomentose; flowers large, yellow with a dark-purple eye, ... *H. vitifolius*.

O O Capsules rounded or obtuse, not winged.

Capsules glabrous; flowers white, hardly an in. in diameter, the petals reflexed; scabrous herb, ... *H. micranthus*.

Capsules hirsute; all parts, also calyx and involucre densely scurvy tomentose; involucre-leaflets 10; flowers large, white then rose-coloured; a large shrub, ... *H. mutabilis*.

As preceding, but all parts softly tomentose; involucre and calyx densely pubescent; involucre-leaflets in Burm. spec. 7, linear (in Malayan 5, ovate-lanceolate), ... *H. venustus*.

\* \* Capsules acuminate or acute, not winged.

× Calycine lobes 1-3-nerved, without thickened margins.

† Leaves densely and softly tomentose.

All parts, also calyx and involucre densely tomentose; pedicels shorter than the peduncles; seeds pubescent, ... *H. panduriformis*.

† † Leaves glabrous or roughish puberulous.

△ Annual herbs. Flowers yellow with dark-purple eye.

Seeds tubercled; leaves glabrous; stem and petioles prickly, ... *H. procerus*.

Seeds smooth; all parts and more especially the calyx and involucre very tubercled-hispid, ... *H. diversifolius*.

Seeds smooth; young parts densely and shortly hispid; involucre-leaflets puberulous or almost glabrous, ... *H. lunarifolius*.

△ △ Shrubs. Flowers from purple to rose-coloured and white.

Leaves glabrous, longer than the petioles.

Pedicels shorter than the petioles, ... *H. Syriacus*.

Pedicels elongate, longer than the petioles, ... *H. Rosa Siacensis*.

× × Calycine lobes with a prominent midrib and (especially when in fruit) with thickened usually indurated borders.

O Involucre-leaflets bearing on the back an oblong or linear appendage.

△ Appendage of involucre-leaflets leafy, oblong; flowers pale sulphur with crimson eye.

Flowers about 2 in. in diameter, shortly peduncled; stipules lanceolate; stems stiff-hairy and usually prickly, ... *H. furcatus*.

Flowers about an in. in diameter, on long slender peduncles; stipules large, leafy, semi-lunar; stems prickly, ... *H. Surrattensis*.

△ △ Appendage of involucre-leaflets linear, rarely wanting.

Flowers white or pale-sulphur with a purple eye, or purple, the calyx-lobes without a gland on the midrib, ... *H. radiatus*.

O O Involucre-leaflets entire, without any appendage.

Calyx dry, horny in fruit, the lobes prickly ciliate, with a large gland on the midrib; seeds glabrous, ... *H. cannabina*.

Calyx fleshy, red, the lobes without prickles, usually a little hairy but soon glabrescent; seeds shortly hispid, ... *H. Sabdariffa*.

Subg. 3. *Abelmoschus*. Calyx spathaceous, 5- rarely 3-toothed, deciduous, surrounded by a 5- to 20-leaved free often very deciduous involucre. Seeds glabrous.

× Involucre-leaflets short and small, deciduous already before opening of the flowers.

Flowers rather small, uniform white, ... *H. ficulneus*.

× × Involucre-leaflets narrow linear, often numerous and long; flowers





large, yellow with purple eye.

O Capsules short, 5-angled

† Involucre-leaflets about 10-12.

All parts minutely scabrous; peduncles about twice as long as the capsule, slender; flowers about  $1\frac{1}{2}$  in. in diameter, ... *H. sagittifolius*.

All parts spreadingly setose; peduncles as long or shorter than the capsule, strong; flowers 2 to 3 in. in diameter, ... *H. abelmoschus*.

†† Involucre-leaflets 15 to 20.

Stems hirsute; leaves lobed, tomentose and sprinkled with stiff hairs; involucre-leaflets rather persistent, ... *H. cancellatus*.

O O Capsule elongate-conical, 7-angular.

Involucre-leaflets 10; all parts slightly hairy, ... *H. esculentus*.

× × × Involucre-leaflets broad and leafy, usually large, 4 to 6; flowers yellow with purple eye. Stems setose.

O Involucre-leaflets 4.

Leaves almost glabrous; involucre-leaflets glabrous, along the borders shortly tomentose, ... *H. Manihot*.

Leaves beneath sprinkled with 3-forked short hairs; involucre-leaflets appressed pubescent and setose-ciliate, ... *H. hostilis*.

O O Involucre-leaflets 6.

Leaves hirsute; involucre-leaflets sprinkled with long stiff hairs, ... *H. pungens*.

B. Leaflets of the involucre united up to the middle or at least at the base, sometimes forming a cup-shaped involucre.

Subg. 4. *Paritium*. Trees, shrubs or woody climbers.

\* Trees or erect shrubs. Seeds glabrous. Flowers large, yellow with purple eye.

Leaves deeply 3-lobed, ... *H. hastatus*.

Leaves not divided, entire or crenulate, ... *H. tiliaceus*.

\* \* Seeds woolly or pubescent.

† Woody climbers.

All parts velvety tomentose, leaves glabrescent above; involucre-leaflets 4-7, velvety, ... *H. scandens*.

†† Trees.

All parts tawny setose; leaves entire, tawny tomentose; involucre-leaflets 10, hirsute, ... *H. macrophyllus*.

1. *H. SOLANDRA*, L'Her. Stirp. I. 103. t. 49; Roxb. Fl. Ind. III. 197; Hf. Ind. Fl. I. 336.

HAB. Ava, Taong dong and Segain (Wall.)

2. *H. VITIFOLIUS*, L. Mant. 569; Roxb. Fl. Ind. III. 200; Hf. Ind. Fl. I. 338. (*H. truncatus*, Roxb. Fl. Ind. III. 200).

HAB. Not uncommon along borders of fields, in shrubberies, rubbishy places round villages, etc., also in the dry forests, all over Burma from Chit-tagong and Ava down to Pegu. Fl. R. and C. S.; Fr. H. S.

3. *H. MICRANTHUS*, L. f. Suppl. 308; Hf. Ind. Fl. I. 335. (*H. rigidus*, L. f. Suppl. 310; Roxb. Fl. Ind. III. 195.)

HAB. Ava, Pagha myo (Wall.).





\*4. *H. MUTABILIS*, L. sp. pl. 977 ; Roxb. Fl. Ind. III. 201 : Bot. Reg. t. 589 ; Hf. Ind. Fl. I. 344.

HAB. Only cultivated in gardens.

5. *H. VENUSTUS*, Bl. Bydr. 71 ; Miq. Fl. Ind. Bot. I/2. 155.

Var.  $\beta$ . *BRANDISII*, involucre-leaflets constantly 7, narrow linear.

HAB. Upper Tenasserim, Doyoo Kyee Pass (Brandis). Fl. Fr. March.

6. *H. PANDURIFORMIS*, Burin. Fl. Ind. 151. t. 47. f. 2 ; Hf. Ind. Fl. 338. (*H. tubulosus*, Cav. Diss. III. 161. t. 68. f. 2 ; Roxb. Fl. Ind. III. 196).

HAB. Ava (Wall.) ; Prome, Meaday (R. Scott). Fr. Apr.

7. *H. PROCERUS*, Wall. Cat. 2692 ; Hf. Ind. Fl. I. 339.

HAB. Ava (Wall.).

8. *H. DIVERSIFOLIUS*, Jacq. Ic. rar. t. 551 ; Roxb. Fl. Ind. III. 208 ; Bot. Reg. t. 381 ; Hf. Ind. Fl. I. 339.

HAB. Ava (Wall.).

9. *H. LUNARIFOLIUS*, Willd. sp. pl. III. 811 ; Wight Ic. t. 6 ; Hf. Ind. Fl. I. 338. (*H. pruriens*, Roxb. Fl. Ind. III. 196 ; *H. racemosus*, Ldl. Bot. Reg. t. 917).

HAB. Ava, Segain and towards the Taong dong (Wall.).

\*10. *H. SYRIACUS*, L. sp. pl. 978 ; Roxb. Fl. Ind. III. 195 ; Bot. Mag. t. 83 ; Hf. Ind. Fl. I. 344. (*H. Storckii*, Seem. Flor. Vit. 17. t. 4.)

HAB. Occasionally cultivated by the Karens of Martaban.

\*11. *H. ROSA SINENSIS*, L. sp. pl. 977 ; Roxb. Fl. Ind. III. 194 ; Bot. Mag. t. 158 ; Bot. Reg. t. 1826 ; Hf. Ind. Fl. I. 344.

HAB. Much cultivated in native gardens and villages and occasionally seen in neglected lands round villages. Fl.  $\infty$ .

12. *H. FURCATUS*, Roxb. Fl. Ind. III. 204 ; Hf. I. 345. (*H. aculeatus*, Roxb. l. c. 206 teste Masters).

HAB. Ava, Irrawadi (Wall.) ; Arracan, frequent on the lower hills of Koladyne District. Fl. Octob.

13. *H. SURRATTENSIS*, L. sp. pl. 979 ; Roxb. Fl. Ind. III. 205 ; Bot. Mag. t. 1356 ; Wight Ic. t. 197 ; Hf. Ind. Fl. I. 334. (*H. heterophyllus*, Griff. Not. Dicot. 520.)

HAB. Frequent all over Burma and adjacent provinces, in the leaf-shedding forests, especially the low ones ; also in savannahs and deserted tounggyas, etc. Fl. Fr. C. S.

*H. aculeatus*, Roxb. differs chiefly by the much smaller stipules which, however, pass into those of *H. Surrattensis*.

\*14. *H. RADIATUS*, Cav. Diss. III. 150. t. 54. f. 2 ; Bot. Mag. t. 1911 ; Roxb. Fl. Ind. III. 209 ; Hf. Ind. Fl. I. 335. (*H. sp. Furcaria*, Griff. Not. Dicot. 521).





Var.  $\alpha$ . corolla white or pale-sulphur with a purple eye.

Var.  $\beta$ . LINDLEYI (*H. Lindleyi*, Wall. Pl. As. rar. I. t. 4; Bot. Reg. t. 1395; *H. radiatus*, Bot. Mag. t. 5098 ?)

HAB. Much cultivated all over Burma from Chittagong and Ava down to Tenasserim, and often like wild in deserted toungyas. Fl. Fr. C. S.

\*15. *H. CANNABINUS*, L. sp. pl. 979; Roxb. Corom. Pl. II. t. 190 and Fl. Ind. III. 208; Hf. Ind. Fl. I. 339.

HAB. Cultivated in toungyas of Pegu and Martaban, and often as wild in deserted ones.

16. *H. SABBARIFFA*, L. sp. pl. 978; Hf. Ind. Fl. I. 340.

HAB. Much cultivated all over Burma from Chittagong and Ava down to Pegu, sometimes as wild in deserted toungyas. Fl. Fr. C. S.

\*17. *H. FICULNEUS*, L. sp. pl. 978; Hf. Ind. Fl. I. 340. (*H. prostratus*, Roxb. Fl. Ind. III. 208; *Abelmoschus ficulneus*, WA. Prod. I. 53; Wight Ic. t. 154; *H. strictus*, Roxb. l. c. 206).

HAB. Rarely cultivated in native gardens of Pegu.

18. *H. SAGITTIFOLIUS*, Kurz in Journ. As. Soc. Beng., 1871, 46. (*H. Abelmoschus*, var.  $\alpha$ . *multiformis*, Mast. in Hf. Ind. Fl. I. 342; *H. hastatus*, Cav. Diss. III. 144. t. 50 f. 1 ? non Linn. f.).

HAB. Ava, Mcaong (Wall.); Pegu (Brandis). Fl. Sept.

19. *H. ABELMOSCHUS*, L. sp. pl. 980; Roxb. Fl. Ind. III. 202; Griff. Not. Dicot. 541 ?; Hf. Ind. Fl. I. 342. (*Abelmoschus moschatus*, Moench; Wight Ic. t. 399; *Abelmoschus pseudo-Abelmoschus*, Walp. Rep. I. 308).

HAB. Not unfrequent in the mixed, especially the upper-mixed, forests of Arracan and Pegu; also Tenasserim, Moulmein; Ava, Segain. Fl. Fr. Nov.—Jan.

20. *H. CANCELLATUS*, L. f. Suppl. 311; Roxb. Fl. Ind. III. 201; Hf. Ind. Fl. I. 342. (*Abelmoschus crinitus*, Wall. Pl. As. rar. I. 39. t. 44).

HAB. Not unfrequent in the dry forests of Prome and Ava; also in the low forests of the Irrawadi zone, Pegu. Fr. January.

Only the form figured by Wallich occurs in Burma, the other with overlapping leaf-bases, more obtuse lobes, and different tomentum seems to be restricted to Hindustan.

\*21. *H. ESCULENTUS*, L. sp. pl. 980; Cav. Diss. III. t. 61. f. 2; Hf. Ind. Fl. I. 343. (*Hibiscus longifolius*, Wild. sp. pl. III. 827; Roxb. Fl. Ind. III. 210).

HAB. Cultivated in Burma (accord. Revd. F. Mason).

\*22. *H. MANIHOT*, L. sp. pl. 980; Bot. Mag. t. 1702 and t. 3152; Hf. Ind. Fl. I. 341. (*H. pentaphyllus*, Roxb. Fl. Ind. III. 212; *Abelmoschus Manihot*, Walp. Rep. I. 311).



HAB. Rarely cultivated by natives in Pegu.

23. *H. HOSTILIS*, Wall. ap. Mast. in Hf. Ind. Fl. I. 342.

HAB. Not uncommon in the upper mixed forests of the Pegu Yomah ; also Ava (Wall.) Fl. Fr. C. S.

24. *H. PUNGENS*, Roxb. Fl. Ind. III. 213 ; Hf. Ind. Fl. I. 341.

HAB. Upper mixed forests of the northern parts of the Pegu Yomah at about 1200 to 2000 ft. elevation. Fr. C. S.

\*25. *H. HASTATUS*, L. f. Suppl. 310 (non Cav.) (*H. tricuspis*, Cav. Diss. III. 152, t. 55, f. 2 ; Roxb. Fl. Ind. III. 202 ; Hf. Ind. Fl. I. 344).

HAB. Rarely cultivated in gardens. Fl. R. S.

26. *H. TILIACEUS*, L. sp. pl. 976 ; Roxb. Fl. Ind. III. 192 ; Hf. Ind. Fl. I. 343. (*Paritium tiliaceum*, A. Juss. in St. Hil. Fl. Bras. I. 198 ; Wight Ic. t. 7 ; Griff. Not. Dicot. 523.)

Var.  $\beta$ . *TORTUOSUS*, Mast. in Hf. l. c. (*H. tortuosus*, Roxb. Fl. Ind. III. 192 ; Bot. Reg. t. 232).

HAB. Common in the beach and tidal forests all along the shores from Chittagong down to Tenasserim and the Andamans, ascending the rivers as far as the tidal waves. Fl. Fr.  $\infty$ .

27. *H. MACROPHYLLUS*, Roxb. Hort. Beng. 1814. 51 ; Wall. Pl. As. rar. I. 44, t. 51 ; Hf. Ind. Fl. I. 337. (*H. vulpinus*, Rwdt. Cat. Buitenz. 88 ; Miq. Fl. Ind. Bat. I/2. 157 ; *H. spathaceus*, Bl. Bydr. 72 ; *H. setosus*, Roxb. Fl. Ind. III. 193.)

HAB. Frequent in the tropical forests all over Burma from Chittagong and Martaban down to Tenasserim. Fl. Fr. R. S.

If the principle of the priority of the name first accompanied by a description be adhered to, Blume's name will have to be adopted. Unlike Wallich, Roxburgh described and figured the plants that he named, and unfortunate circumstances beyond his control and finally death prevented their publication : hence I consider that his *Hortus Benghalensis* claims priority.

28. *H. SCANDENS*, Roxb. Fl. Ind. III. 200 ; Hf. Ind. Fl. I. 337.

HAB. Frequent in the tropical forests of Martaban. Fl. Fr. March, Apr.

### *Thespesia*, Corr.

#### *Conspectus of species.*

All younger parts and unripe capsules covered with rusty coloured scales ; leaves glabrous ; a tree, ... .. *T. populnea*.  
All younger parts and usually the leaves beneath shortly stellate tomentose ; unripe capsules densely hirsute, a meagre shrub, ... .. *T. Lampar*.

1. *TH. POPULNEA*, Corr. Ann. Mus. IX. 290 ; Wight Ic. t. 8 ; Hf. Ind. Fl. I. 345 ; Bedd. Fl. Sylv. t. 63. (*Hibiscus populneus*, Roxb. Fl.



Ind. III. 190; *Hibiscus populneoides*, Roxb. l. c. 191; *Thesp. macrophylla*, Bl. Bydr. 73; Miq. Fl. Ind. I/2. 151).

HAB. Common in the beach and tidal forests all along the shore from Chittagong down to Tenasserim and the Andamans; Ava, Bhamo and Sabado (J. Anderson). Fl. Sept. Fr. March, May.

The occurrence of this saltloving tree in Ava is unique and requires explanation. Brine springs are numerous in Prome and Ava, and may possibly account for such an exceptional re-appearance of a sea-shore plant in the interior of Burma.

2. TH. LAMPAS, Dalz. in Dalz. and Gibs. Bombay Fl. 19; Hf. Ind. Fl. I. 345. (*Hibiscus Lampas*, Cav. Diss. III. 154. t. 56. f. 2; Roxb. Fl. Ind. III. 197; Wight Ic. t. 5; *H. tetralocularis*, Roxb. l. c. 198?; *Azanza Zollingeri*, Alef. in Bot. Zeit. 1861. 298).

HAB. Frequent in all leaf-shedding forests, especially the mixed ones, also in savannahs; all over Burma. Fl. Fr. C. & H. S.

### Gossypium, L.

#### *Conspectus of species.*

Annual; seeds free, clothed with firmly adhering silky down, ... *G. herbaceum*.  
Shrubby; perennial; seeds black, free or cohering, devoid of adhering pubescence, ... *G. Barbadense*.

\*1. *G. HERBACEUM*, L. sp. pl. 975; Roxb. Fl. Ind. III. 184; Royle Ill. Him. Pl. 98. t. 23. f. 1; Wight Ic. t. 10; Hf. Ind. Fl. I. 346.

Var.  $\alpha$ . *HERBACEUM*, (*G. herbaceum*, L. l. c.; *G. hirsutum*, Roxb. Fl. Ind. III. 187; *G. Barbadense*, Wight Ill. t. 28/c.) lobes of leaves acuminate. Var.  $\beta$ . *hirsutum*. Mast. in Hf. l. c. (*G. hirsutum*, L. sp. pl. 975; DC. Prod. I. 456; *G. obtusifolium*, Roxb. Fl. Ind. III. 183; *G. herbaceum*, Wight Ic. t. 9.), leaves with usually blunt lobes, the upper ones often undivided, with or without a gland on the midrib beneath; involucre-leaflets entire or serrate; capsules when ripe green; cotton white.

HAB. Var.  $\alpha$ . and  $\beta$ . much cultivated all over Burma, and often seen as wild in deserted toungyas and neglected lands. Fl. Fr. C. and H. S.

\*2. *G. BARBADENSE*, L. sp. pl. 975; Roxb. Fl. Ind. III. 187; Hf. Ind. Fl. I. 347. p. p.

HAB. Rarely seen in gardens in Pegu.

### Bombax, L.

#### *Conspectus of species.*

Leaflets on a 10 to 12 lin. long petiolule; staminal bundles consisting of 15 to 20 strong and thick filaments, ... *B. Malabaricum*.

Leaflets decurrent on the short 2 to 3 lin. long petiolule; staminal bundles consisting of 50 or more long filiform filaments, ... *B. insigne*.





1. *B. MALABARICUM*, DC. Prod. I. 479; Bedd. Fl. Sylv. Madr. t. 82; Hf. Ind. Fl. I. 249. (*Salmalia Malabarica*, Schott. Melet. 35; *B. heptaphylla*, Cav. Diss. V. 296; Roxb. Corom. Pl. III. t. 247 and Fl. Ind. III. 167; Wight Ill. t. 29. a. b.).

HAB. Frequent in all leaf-shedding forests, especially the mixed ones, all over Burma from Chittagong and Ava down to Tenasserim. Fl. H. S. Fr. C. S.

2. *B. INSIGNE*, Wall. Pl. As. rar. I. 71. t. 79 and 80; Hf. Ind. Fl. I. 349.

HAB. Frequent in the upper mixed forests of the Pegu Yomah and the Andamans; also Ava. Fl. H. S. Fr. C. S.

#### *Eriodendron*, DC.

1. *E. PENTANDRUM* (*Bombax pentandrum*, L. sp. pl. 989; Cav. Diss. V. 293. t. 151; Roxb. Fl. Ind. III. 165; *E. anfractuosum*, DC. Prod. I. 479; Wight Ic. t. 400; Griff. Not. Dicot. 533; Hf. Ind. Fl. I. 350).

HAB. Rare (one tree only seen) in the coast forests of South Andaman; here and there cultivated in Pegu and Tenasserim.

One of those trees that are stated to be very frequent in the Indian jungles, but I myself have never succeeded in seeing it in a truly wild state, although the loftiness of the tree and the decussate ternation of its branches would render it recognizable from a long distance.

#### *Durio*, L.

1. *D. ZIBETHINUS*, L. sp. pl. 698; Kœn. in Trans. Linn. Soc. VII. 266; t. 14—16; Roxb. Fl. Ind. III. 399; Griff. Not. Dicot. 528. t. 596; Hf. Ind. Fl. I. 351.

HAB. Tenasserim. Fr. May, June.

Helfer writes in his second report on the resources of Tenasserim: "This tree does not grow so far north as Moulmein, some few trees excepted which are grown as a rarity on the island of Beloo. Its sphere begins at Tavoy; large plantations occur to the E. of Mount Burney, and very fine specimens in the valley of Taunbiaun. Lower down on the Tenasserim, the tree begins to grow almost spontaneously, and in lat. 14° it forms large forests."

The Burmese specimens in Dr. Brandis' herbarium, although destitute of corolla, do not differ from the Malayan durian, and the calyx is the same in size as well as in shape.

### STERCULIACEÆ.

#### *Conspectus of species.*

*Trib. I. STERCULIÆ.* Flowers unisexual or polygamous. Petals none. Anthers 5-15, sessile, surrounding the stalked ovary or in males the top of a shorter or longer column, or shortly polyadelphous. Mature carpels distinct, sessile or stalked.





\* Anthers irregularly clustered, numerous. Fruit dehiscent.

1. STERCULIA. Ovules 2 or more in each cell. Carpels follicular.

\* \* Anthers 5, in a ring. Carpels indehiscent.

2. HERITIERA. Ovules solitary. Carpels often of a firm texture.

*Trib. II. HELICTEREE.* Flowers hermaphrodite. Petals deciduous. Anthers 5-15, sessile or on short filaments, situated on the margin of the cup-like dilated summit of the column and usually alternating with staminods.

3. HELICTERES. Anther-cells divaricate or confluent into one. Fruit a capsule, sometimes twisted. Seeds not winged.

4. PTEROSPERMUM. Anther-cells parallel. Capsule woody, terete or 5-angular. Seeds winged.

*Trib. III. ERIOLANEE.* Flowers hermaphrodite. Petals deciduous. Anthers numerous on the outside of the tubular or conical column from the middle to the top. Staminods none.

5. ERIOLANA. Capsules woody, 5-valved.

*Trib. IV. DOMBEYEE.* Flowers hermaphrodite. Petals usually persistent, flat. Anthers 10 to 20, rarely 5, united into a short cup at or near the top of the column, the cells parallel. Staminods 5 or none.

× Anthers 15, rarely 10.

6. PENTAPETES. Bracteoles caducous. Sepals herbaceous. Ovary-cells with several ovules. Style simple.

× × Anthers 5.

7. MELHANIA. Bracteoles 3, persistent. Stamens united into a cup, with 5 intervening elongate staminods.

*Trib. V. HERMANNIEE.* Flowers hermaphrodite. Petals marcescent, flat. Stamens 5, shortly united or rarely tubular at base only. Staminods usually none.

× Ovary 5-celled.

8. MELOCHIA. Capsules almost globular. Seeds wingless. Herbs or undershrubs.

9. VISENIA. Capsules deeply 5-lobed. Seeds winged at their extremities. Trees.

× × Ovary 1-celled

10. WALTHERIA. Calyx campanulate. Staminods none.

*Trib. VI. BUETTNERIEE.* Flowers hermaphrodite. Petals concave at base, usually appendaged at top. Anthers 5-15, rarely numerous, introrse, the filaments united into a shorter or longer tube, solitary or in groups alternating with the staminods.

O Anthers by 2-4 alternating with a staminod.

11. AEROMA. Petals with a clawed ovate blade. Capsule 5-winged.

12. GUAZUMA. Petals clawed, with a linear 2-cleft blade. Fruit globular, woody tubercled.

13. LEPTONYCHIA. Petals concave, not clawed. Filaments long, only at base connate, alternating by 2 with the short staminods, at the back augmented by a series of subulate staminods.

O O Anthers singly alternating with the staminods.

14. BUETTNERIA. Petals cucullate at the clawed base. Staminods short and blunt. Capsules woody, variously armed.

### *Sterculia*, L.

#### *Conspectus of species.*

- Subg. 1. Sterculia.* Seeds without wings, 2 or more along the suture of the coriaceous carpels, never inserted at the base.





## \* Leaves digitate.

Leaves glabrous; calyx rather large, the lobes spreading, ... *St. fatida*.

Leaves canescent tomentose beneath; calyx small, the lobes conniving, short, ... *St. versicolor*.

## \* \* Leaves palmately lobed or cut. Leaf-shedding trees.

Carpels densely covered with stiff fragile hairs; flowers small, ... *St. urens*.

Carpels shortly tomentose from stellate hairs, ... *St. villosa*.

Carpels densely covered with stiff short hairs, glabrescent; flowers nearly  $\frac{1}{2}$  in. in diameter, ... *St. ornata*.

## \* \* \* Leaves all entire. Small evergreen trees or meagre shrubs.

## O Leaves quite glabrous.

× Calyx-lobes not spreading, almost erect or more usually conniving with their tips.

Calyx shortly tubular, striate, the lobes of the length of the tube, ... *St. longifolia*.

× × Calyx almost rotate.

Calyx lobes from a broader base linear, very long and somewhat twisted, ... *St. coccinea*.

## O O Leaves more or less tomentose or puberulous, at least beneath.

× Flowers more than  $\frac{1}{2}$  in. long, in simple brown tomentose racemes.

Leaves beneath and petioles softly rusty pubescent, ... *St. rubiginosa*.

× × Flowers in panicles.

Leaves tomentose; calyx-lobes free and spreading; flowers long-pedicelled, ... *St. angustifolia*.

Leaves beneath minutely stellate-puberulous; calyx-lobes short and connivent; flowers shortly pedicelled, ... *St. parviflora*.

*Subg. 2. Firmiana.* Calyx tubular. Seeds without wings. Carpels chartaceous and expanded leaflike, bearing 1 or 2 seeds along the marginal sutures at about  $\frac{1}{2}$  of their length.

Leaves more or less lobed, occasionally almost entire, glabrous or puberulous beneath; calyx about 8-9 lin. long, ... *St. colorata*.

Leaves very large, much lobed, pubescent beneath; calyx about 1 to  $1\frac{1}{2}$  in. long, ... *St. fulgens*.

*Subg. 3. Scaphium.* (incl. *Pterocymbium* and *Carpophyllum*). Calyx more or less campanulate. Seeds without wings, solitary, laterally adnate to the base of the boat-shaped chartaceous or membranous follicles.

\* Follicles produced below at about the middle into an additional bluntish sac-like lobe.

Leaves more or less tomentose or puberulous beneath; calyx campanulate, green, ... *St. campanulata*.

\* \* Follicles not produced into an additional lobe.

Leaves coriaceous, glabrous, glossy; calyx almost rotate, yellowish, ... *St. scaphigera*.

*Subg. 4. Pterygota.* Seeds numerous, winged along their upper end, enclosed in a woody large follicle.

Leaves entire, glabrous, 5-nerved at base; follicles as large as the fist, ... *St. alata*.

1. *ST. FÆTIDA*, L. sp. pl. 1431; Roxb. Fl. Ind. III. 154; Wight Ic. t. 181 and 364; Hf. Ind. Fl. I. 354.

HAB. Not unfrequent in the upper mixed forests of the Pegu Yomah. Fl. Apr. May; Fr. Febr. March.



2. *ST. VERSICOLOR*, Wall. Pl. As. rar. I. 48. t. 59; Hf. Ind. Fl. I. 355.

HAB. Ava, on limestone hills on the right side of the Irrawaddi near Segain (Wall.) Fl. Octob.

3. *ST. URENS*, Roxb. Corom. Pl. I. t. 24 and Fl. Ind. III. 145; Hf. Ind. Fl. I. 355.

HAB. Not unfrequent in the drier upper mixed forests of the Pegu Yomah and Martaban; and in the mixed dry forests of Prome; also Tenasserim. Fr. March.

4. *ST. VILLOSA*, Roxb. Fl. Ind. III. 153; Hf. Ind. Fl. I. 355.

HAB. Frequent in the upper mixed forests of the Pegu Yomah and Martaban; Tenasserim; Andamans. Fl. H. S.; Fr. Begin of R. S.

5. *ST. ORNATA*, Wall. ap. Voigt Hort. Calc. 105; Kurz in Journ. As. Soc. Beng. 1873. 228.

HAB. Not unfrequent in the tropical forests of the Pegu Yomah and Martaban down to Tenasserim. Fl. Febr.; Fr. March, Apr.

6. *ST. LONGIFOLIA*, Vent. Malm. II. No. 91. in adnot.; DC. Prod. I. 482; Miq. Fl. Ind. Bat I/2. 173. (*St. striatiflora*, Mast. in Hf. Ind. Fl. I. 356).

HAB. Birma (Griff. 586); probably Tenasserim.

7. *ST. COCCINEA*, Roxb. Fl. Ind. III. 151; and Hook. Bot. Misc. I. 286; Hf. Ind. Fl. I. 357.

HAB. Frequent in the tropical forests of the Pegu Yomah and Martaban down to Tenasserim. Fl. March; Fr. Apr.

Masters refers my Pegu specimens to a species which he calls *St. lævis*, Wall., but my plant is certainly Roxburgh's.

8. *ST. RUBIGINOSA*, Vent. Hort. Malm. II. 91 in adn.; Hf. Ind. Fl. I. 358.

HAB. Birma (teste Masters).

9. *ST. ANGUSTIFOLIA*, Roxb. Fl. Ind. III. 148; DC. Prod. I. 482; Walp. Rep. V. 100.

Var.  $\alpha$ . *ANGUSTIFOLIA*, leaves on petioles 8 to 10 lin. long, lanceolate or broadly lanceolate, acuminate.

Var.  $\beta$ . *MOLLIS* (*St. mollis*, Wall. Cat 1131; Walp. Rep. V. 101), leaves obovate oblong, on petioles 4 to 5 lin. long, shortly acuminate, rounded at the narrowed base; tomentum almost velvety; pedicels much shorter.

HAB. Both varieties in Tenasserim (Wall. Falc. Helf.) Fl. Febr.; Fr. Apr.

10. *ST. PARVIFLORA*, Roxb. Fl. Ind. III. 147; Hf. Ind. Fl. I. 359.

HAB. Andamans, in the coast-forests. Fr. Apr. May.





My specimens being in fruit only the identification is somewhat doubtful, but they agree otherwise with Malacca specimens. Masters mentions *St. guttata*, Roxb. as growing on the Andamans.

11. *ST. COLORATA*, Roxb. Corom. Pl. I. t. 23 and Fl. Ind. III. 116; Hook. Ic. pl. t. 143; Hf. Ind. Fl. I. 359.

HAB. Frequent in all leaf-shedding forests all over Burma from Chittagong and Ava down to Tenasserim and the Andamans. Fl. H. S.; Fr. H. and begin of R. S.

12. *ST. FULGENS*, Wall. Cat. 1135 (*Firmiana colorata*,  $\beta$ . *fulgens*, R. Br. and Benn. in Horsf. Pl. Jav. rar. 235; Walp. Rep. V. 104).

HAB. Ava, Taong dong; Tenasserim, Moulmein (Wall.)

I know not what Masters describes under the above name, unless it be the N. W. Indian *St. pallens*, Wall. ap. Voigt Cat. H. Bot. Calc. 195, a totally different tree with pale yellowish softly tomentose smaller and more campanulate flowers and different leaves.

13. *ST. CAMPANULATA*, Wall. ap. Voigt. Hort. Calc. 105; Kurz in Flora 1872. 495.; Hf. Ind. Fl. I. 362. (*Pterocymbium Javanicum*, R. Br. in Horsf. Pl. Jav. rar. 219. t. 45; Miq. Fl. Ind. Bat. 1/2. 179).

HAB. Frequent in the tropical forests along the eastern slopes of the Pegu Yomah and Martaban. Fl. March; Fr. Apr.

14. *ST. SCAPHIGERA*, Wall. Cat. 1130; Hf. Ind. Fl. I. 361. (*Scaphium Wallichii*, Schott and Endl. Melet. 33; Walp. Rep. V. 104; *Carpophyllum macropodum*, Miq. Suppl. Fl. Sumatr. 401).

HAB. Frequent in the tropical forests along the eastern and central slopes of the Pegu Yomah and Martaban; also Tenasserim. Fl. Febr. March; Fr. March, Apr.

15. *ST. ALATA*, Roxb. Corom. Pl. III. 84. t. 287 and Fl. Ind. III. 182; Hf. Ind. Fl. I. 360. (*St. Heynii*, Bedd. Fl. Sylv. t. 230).

HAB. Frequent in the tropical forests all over Chittagong, Pegu and Martaban down to Tenasserim; also on the Andamans. Fl. Febr. March, Fr. Apr. May.

#### *Doubtful species.*

1. *ST. LINGUIFOLIA*, Mast. in Hf. Ind. Fl. I. 357.

HAB. Tenasserim, Tavoy (Parish).

2. *ST. ENSIFOLIA*, Mast. in Hf. Ind. Fl. I. 359.

HAB. Tenasserim, Mergui (Griff.)

#### *Heritiera*, Ait.

##### *Conspectus of species.*

\* Carpels glossy or at least smooth, brown; leaves shortly petioled.

Leaves usually cordate or rounded at base; carpels strong-crustaceous, obliquely ovoid with a sharp keel pointed at the summit, ... .. *H. Tothila*.





Leaves usually narrowed at base; carpels fibrous-woody under the thin bladdery epicarp, obliquely and broadly depressed, the keel at the summit broad and almost wing-like, ... *H. minor*.

\* \* Carpels sea-green or grey, rough and corky-tubercled; leaves long petioled. Carpels obliquely ovoid, keel indistinct, at the extremity produced into a thick narrow wing-like appendage, ... .. *H. macrophylla*.

1. *H. TOTHILA*, (*H. littoralis*, Dry. in Ait. Hort. Kew. III. 546; Roxb. Fl. Ind. III. 142; DC. Prod. I. 63; *Balanopteris Tothila*, Gært. Fr. II. t. 99; Rheede Hort. Mal. VI. t. 21).

HAB. Frequent in the tidal forests all along the sea-shore from Chittagong down to Tenasserim and the Andamans. Fl. Apr. May; Fr. May.

2. *H. MINOR*, Lamk. Diet. III. 229; DC. Prod. I. 484; Roxb. Fl. Ind. III. 142. (*H. fomes*, Buch. in Sym. Ava Emb. 1800. t. 28; Hf. Ind. Fl. I. 363; *Balanopteris minor*, Gært. Fr. II. 1791. t. 98. f. 2; *H. littoralis*, Griff. Not. Dicot. 532. t. 585. f. 3).

HAB. Frequent in the tidal forests all along the Burmese shores from Chittagong down to Tenasserim, ascending the rivers as far as the tidal waves. Fl. Febr. Jun.; Fr. R. S.

3. *H. MACROPHYLLA*, Wall. ap. Voigt Hort. Calc. 103; Kurz in Journ. As. Soc. Beng. 1873. 61. and in Trim. Journ. Bot. 1874. 66. fig. 7.

HAB. Upper Tenasserim, at the foot of a hill a mile above Troglä (Wall. Cat. 1162).

### Helicteres, L.

#### Conspectus of species.

*Sect. 1. Spirocarpæa*. (*Isora*, Schott and Endl.). Carpels spirally twisted; leaves unequally serrate.

Calyx about  $\frac{1}{2}$  in. long or longer, ... .. *H. Isora*.

*Sect. 2. Orthocarpæa*. (*Oudemansia*, Miq.). Carpels straight or nearly so.

\* Calyx about  $\frac{1}{2}$  in. long or longer. Leaves unequally serrate or toothed.

Calyx laxly stellate-woolly and viscid, ... .. *H. viscida*.

Calyx shortly scurvy tomentose, ... .. *H. hirsuta*.

\* \* Calyx only 2 or 3 lin. long.

O Carpels firmly cohering forming a densely villous-echinate apiculate or obtuse capsule. Leaves entire or obtusely serrate, shortly whitish-tomentose beneath.

Stems tawny tomentose; leaves sprinkled above with stellate hairs, blunt or acute, ... .. *H. obtusa*.

Stems glabrescent; leaves glabrous above, acuminate, ... .. *H. lanceolata*.

O O Carpels loosely cohering, with the points all free, shortly hairy echinate. Leaves never whitish pubescent beneath, serrate.

Flowers in short axillary racemes, ... .. *H. plebeja*.

Flowers in elongated slender racemes usually much longer than the pubescent leaves, ... .. *H. elongata*.





1. *H. ISORA*, L. sp. pl. 1366; Roxb. Fl. Ind. III. 143; Wight Ic. t. 180; Bot. Mag. t. 2061; Hf. Ind. Fl. I. 365.

HAB. Burmah (accord. Revd. Dr. F. Mason.)

2. *H. VISCIDA*, Bl. Bydr. 79; Walp. Rep. I. 334. (*Oudemansia viscida*, Miq. Fl. Ind. Bat. I/2. 171; *H. spicata*, var. *lanigera*, Mast. in Hf. Ind. Fl. I. 366).

HAB. Ava, Taong dong (Wall.)

3. *H. HIRSUTA*, (Lour. Fl. Coch. II. 648?); Bl. Bydr. 80. (*Oudemansia hirsuta*, Miq. Fl. Ind. Bat. I/2. 171; *H. spicata*, Colebr. in Roxb. Hort. Beng. 97; G. Don. Gen. Syst. I. 507; Walp. Rep. I. 332; *H. oblonga*, Wall. ap. G. Don. l. c. Walp. Rep. I. 332 and II. 794 and Ann. IV. 320).

Var.  $\alpha$ . *SPICATA*, (*H. spicata*. Coleb. l. c.).

Var.  $\beta$ . *OBLONGA*, (*H. oblonga*, Wall. l. c.; *H. vestita*, Wall. Cat. 1844).

HAB. Var.  $\beta$ . Tenasserim, from Moulmein to Tavoy. Fl. March.

4. *H. OBTUSA*, Wall. Cat. 1184; Kurz in Journ. As. Soc. Beng. 1873. 62; Hf. Ind. Fl. I. 366.

HAB. Tenasserim, from Moulmein to Mergui; Pegu (Macl. teste Mast.); Andamans (V. Ball.) Fl. June; Fr. Jan. to Apr.

This is evidently a near ally to *H. virgata*, Wall. which some authors incorrectly combine with *H. Javensis*, Hassk. (= *Oudemansia integerrima*, Miq. and *H. lanceolata*, DC.). The Chinese *H. angustifolia*, L. (*H. virgata*, Wall.) differs greatly by the small stellate-velvety-tomentose capsules. Also the shape and nervature of the leaves and the indumentum of the flowers appear to me different. Masters gives Mergui as a habitat for it, but he evidently has two or three species in view.

5. *H. PLEBEJA*, Kurz in Journ. As. Soc. Beng. 1870. 67; Hf. Ind. Fl. I. 366. (*H. glabriuscula*, Wall. Cat. 1185, nomen nudum; Hf. Ind. Fl. I. 366).

HAB. Frequent in the mixed, especially the upper mixed, forests of Arracan, Pegu and Martaban, up to 3000 ft. elevation; also Ava. Fl. Oct. Sept.; Fr. Jan. Febr.

The species is also frequent in the Sikkim Terai.

6. *H. ELONGATA*, Wall. Cat. 1845; Hf. Ind. Fl. I. 365.

HAB. Ava, Taong-dong etc.

Hardly more than an elongate-racemed variety of the preceding.

### **Pterospermum. Schreb.**

#### *Conspectus of species.*

\* Capsules distinctly 5-cornered. Leaves large and broad.

O Stipules and bracteoles pinnatifid.

Calyx lobes 3-4 in. long; style towards the base villous, ...

...*P. acerifolium*.

O O Stipules...; bracteoles entire.



Calyx-lobes  $1\frac{1}{2}$ -2 in. long; style glabrous, ... .. *...P. aceroides*,  
 \* \* Capsules terete or nearly so.

O Leaves semi-sagittate at base; stipules pinnatifid.

Flowers 3 in. long or longer; bracteoles large, divided into several many-cleft and jaggy lobes, forming an involucre, ... .. *...P. semisagittatum*.

O O Leaves never semi-sagittate, usually small, entire or shortly lobed; stipules small, entire or 2-3-cleft; flowers not above 2 in. long.

† Pedicels much longer than the petioles.

Leaves usually greyish or whitish tomentose beneath, acuminate; stipules and bracteoles 2-3- rarely 5-cleft. Capsules greyish or whitish velvety, ... *...P. lanceafolium*.

† † Pedicels short, about the length of the petioles or rarely a little longer.

Leaves entire, acuminate, beneath rusty coloured (rarely greyish) tomentose; stipules and bracteoles linear-subulate, with a cucullate basal appendage; capsules brown scurvy-tomentose, glabrescent, ... .. *...P. cinnamomeum*.

Leaves usually small; stipules and bracteoles entire, lanceolate, ... *...P. Blumeianum*.

1. *P. ACERIFOLIUM*, Willd. sp. pl. III. 729; Roxb. Fl. Ind. III. 158; Bot. Mag. t. 620; Wight Ic. t. 631; Hf. Ind. Fl. I. 368. p. p.

HAB. Frequent in the tropical and moister upper mixed forests along choungs all over Burma from Chittagong and Ava down to Tenasserim and the Andamans. Fl. H. S.; Fr. C. S.

2. *P. ACEROIDES*, Wall. Cat. 1171; Kurz in Journ. As. Soc. Beng. 1873. 62.

HAB. Tenasserim, and Andamans, in tropical forests. Fl. H. S.

*Pt. diversifolium*, Bl. appears to be an intermediate form between *Pt. acerifolium* and *Pt. aceroides*, having the flowers and styles of the former but smaller, and the bracteoles of the latter.

3. *PT. SEMISAGITTATUM*, Roxb. Hort. Beng. 50 and Fl. Ind. III. 160; Hf. Ind. Fl. I. 368.

HAB. Frequent in the mixed and dry forests all over Burmah from Chittagong and Ava down to Tenasserim. Fl. H. S.; Fr. C. S.

4. *PT. LANCEAFOLIUM*, Roxb. Fl. Ind. III. 163; Hf. Ind. Fl. I. 368.

HAB. Chittagong; Tenasserim, Tavoy (Wall. teste Mast.)

5. *P. CINNAMOMEUM*, nov. sp.

HAB. Not unfrequent in the tropical forests of Martaban; also Tenasserim. Fr. March.

I attempted to identify the above species with *Pt. fuscum*, Korth. when I had only fruits, but Khasya flowering specimens shew its complete distinctness. Some Khasya specimens in leaf distributed from Kew under the name *Pt. lanceafolium* belong here. It is nearest to *P. rubiginosum*.

6. *PT. BLUMEANUM*, Korth. Ned. Kruidk. Arch. I. 311; Miq. Fl. Ind. Bat. I/2. 191.

HAB. Tenasserim (Helf. 569).



**Eriolæna, DC.**

1. *E. CANDOLLEI*, Wall. Pl. As. rar. I. 51. t. 64; Hf. Ind. Fl. I. 370.

HAB. Not unfrequent in the dry and low, rarely in the mixed, forests of Prome and Ava down to Martaban and Pegu. Fl. H. S.; Fr. C. S.

**Pentapetes, L.**

1. *P. PHENICEA*, L. sp. pl. 958; Roxb. Fl. Ind. III. 157; Bot. Reg. t. 525; Hf. Ind. Fl. I. 371. (*Eriorhaphé punicea*, Miq. Pl. Jungh. I. 289).

HAB. In cultivated plains, along rice-fields, etc., in Pegu, Ava and Prome. Fl. R. S.

**Melhania, Forsk.**

1. *M. HAMILTONIANA*, Wall. Pl. As. rar. I. 69. t. 77; Walp. Rep. I. 349; Hf. Ind. Fl. I. 372.

HAB. Ava, frequent along the sandy dry banks of the Irrawaddi; also Taong-dong (Wall.). Fl. Sept. Oct.; Fr. Nov.

**Melochia, L.**

1. *M. CORCHORIFOLIA*, L. sp. pl. 944; Roxb. Fl. Ind. III. 139; Hf. Ind. Fl. I. 374.

HAB. Common as well in cultivated lands, waste places around villages, long-grassed pastures, etc., as in the leaf-shedding forests, all over Burma and adjacent provinces. Fl. Fr. Sept. to Octob.

**Visenia, Houtt.**

1. *V. INDICA*, Houtt. Syst. Linn. VI. 287. t. 46; Miq. Fl. Ind. Bat. I/2. 189. (*V. umbellata*, Bl. Bydr. 88; Wight Ic. t. 509; *Riedleia velutina*, DC. Prod. I. 491; *Melochia velutina*, Bedd. Fl. Sylv. t. 5; Hf. Ind. Fl. I. 374).

HAB. Rather rare in the tropical forests of Pegu, Martaban and Tenasserim (Brandis). Fl. R. S.

**Waltheria, L.**

1. *W. AMERICANA*, L. sp. pl. 941; DC. Prod. I. 492. (*W. Indica*, L. l. c. 941; Hf. Ind. Fl. I. 374).

HAB. Not uncommon on the lower hills of the Irrawaddi valley from Ava (Segain) to Prome. Fl. Sept. Oct.

**Guazuma, Plum.**

\*1. *G. TOMENTOSA*, H. B. K. Nov. Gen. V. 320; Wight Ill. t. 31; Bedd. Fl. Sylv. Madr. t. 107; Hf. Ind. Fl. I. 375.

HAB. An American tree sometimes seen planted as an avenue-tree. Fl. R. S.; Fr. C. S.



**Leptonychia, Turcz.***Conspectus of species.*

Outer staminods 15, the inner staminods ciliate; capsule 1-celled, rugose, ... *L. glabra*.  
 Outer staminods 10, the inner not ciliate; ovary and capsule 3-5-celled and lobed, the  
 latter minutely tubercled, ... .. *L. heteroclita*.

1. *L. GLABRA*, Turcz in Bull. Mosc. 1858. 222; Hf. Ind. Fl. I. 379.  
 excl. syn.

HAB. Tenasserim (Helf. 658); Moulmein (Lobb. teste Mast.).

2. *L. HETEROCLITA*, Kurz in Journ. As. Soc. Beng. 1870. 67. excl.  
 syn. Turcz. (*Grewia heteroclita*, Roxb. Fl. Ind. II. 590; *Binnendykia*  
*trichostylis*, Kurz in Tydsch. Nat. Ver. Ned. Ind. ser. 3. III. 164; *L.*  
*moacurroides*, Bedd. Fl. Sylv. Madr. t. 114; Hf. Ind. Fl. I. 379; *Grewia*  
*acuminata*, Bedd. in Linn. Trans. XXV. 210?; Hf. Ind. I. 393?).

HAB. South Andaman, in tropical forests.

**Buettneria, L.***Conspectus of species.*

× Leaves cordate-oblong, entire.

Capsules large, greyish velvety, covered with strong woody prickles, ... *B. aspera*.

× × Leaves more or less lobed or angular. Capsules the size of a cherry.

More or less roughish stellate-tomentose; capsules densely covered with brown setose  
 flexible bristles, ... .. *B. pilosa*.

Glabrous or almost so; capsules covered with long stiff smooth bristles, *B. Andamanensis*.

1. *B. ASPERA*, Colebr. ap. Wall. in Roxb. Fl. Ind. ed. Car. II. 383;  
 Hf. Ind. Fl. I. 377.

HAB. Not unfrequent in the tropical forests from Pegu and Martaban  
 down to Tenasserim and the Andamans. Fl. Apr. May.

2. *B. PILOSA*, Roxb. Fl. Ind. I. 618; Hf. Ind. Fl. I. 377.

HAB. Frequent in tropical and mixed forests all over Burma and adjacent  
 provinces. Fr. C. S.

3. *B. ANDAMANENSIS*, Kurz in Andam. Rep. App. B. p. 3. and  
 Journ. As. Soc. Beng. 1871. 47; Hf. Ind. Fl. I. 377.

HAB. Frequent in the coast forests of South Andaman; also Upper  
 Tenasserim, along the Thoungyeen and Attaran rivers (Brandis); Moul-  
 mein (Lobb). Fr. H. S.

*Doubtful species.*

1. *B. CRENULATA*, Wall. Cat. 1150; Hf. Ind. Fl. I. 376.

HAB. Pegu (McLelland); Tenasserim, Attaran and Salween (Wall.)  
 ex Masters.

Wall. Cat. 1152 is mentioned in the Lith. List as *Kleinhovia hospita*.  
*B. catalpifolia*, as represented in the Wallichian Herb. in H. B. C., is a  
 Caracas plant, cultivated and collected in H. B. C. and bears no number.





*B. echinata* Wall. Cat. 1149 is the only No. which I have myself seen, and consists of loose leaves and a piece of a capsule, the former differing from his *St. parviflora*, Wall. Cat. 1121 from Silhet only in size, the latter almost indistinguishable from *B. Andamanensis*. Nipal is also given as a locality but Wallich's Nos. cited are all Burmese.

## TILIACEÆ.

### Conspectus of genera.

#### A. Anthers opening by slits.

*Trib. I. BROWNLOWIÆ.* Sepals united into a bell-shaped 3- to 5-cleft calyx. Anthers short, usually globular or didymous, the cells ultimately confluent at the top.

- \* The 5 inner stamens reduced to staminods.
- 1. BROWNLOWIA. Carpels distinct, globular, 2-valved.
- 2. PENTACE. Fruits 3-5-winged, indehiscent, by abortion 1-seeded.
- \* \* Anthers all anther-bearing.

3. BERRYA. Capsule 3-4-valved, with twice as many wings. Styles 1-4, filiform.

*Trib. II. GREWIEÆ.* Sepals distinct. Petals with a basal scale more or less adnate, inserted round the base of a more or less raised torus bearing at the top the stamens. Anthers short, the cells parallel and distinct.

- \* Fruit dry, winged.
- 4. COLUMBIA. Fruit 3-5-celled, separating into as many 2-winged cocci.
- \* \* Fruit more or less drupaceous, not winged.
- O Fruit unarmed, tomentose to glabrous.
- 5. GREWIA. Drupes more or less lobed or globular.
- O O Fruits prickly.
- 6. TRIUMFETTA. Drupe usually small, globular, indehiscent or separating into cocci.

*Trib. III. TILIEÆ.* Sepals distinct. Petals without a scale at base, inserted directly round the stamens.

- \* Capsule opening loculicidally, almost pod-like or globular, many-seeded.
- 7. CORCHORUS. Stamens all anther-bearing. Capsules pod-like or globular, striate or muricate.
- \* \* Fruits globular, indehiscent, usually 1-seeded.
- 8. SCHOUTENIA. Calyx enlarged under the fruit, membranous, spreading. Stamens free, all anther-bearing.

#### B. Anthers opening by apical pores.

*Trib. IV. SLOANEÆ.* Anthers linear. Staminal disk flat or cushion-like, the sepals and petals inserted directly round the stamens.

9. ECHINOCARPUS. Sepals 4, imbricate in 2 series. Petals 4, gashed, almost imbricate. Disk thick and broad. Capsule woody, 4-valved, echinate setose or velvety.

*Trib. V. ELEOCARPEÆ.* Anthers linear. Petals inserted round the base of a raised torus from the top of which the stamens spring.

10. ELEOCARPUS. Sepals 4-5. Petals induplicate-valvate, laciniate or rarely entire. Drupes fleshy.



**Brownlowia, Roxb.***Conspectus of species.*

\* Leaves deeply peltate.

Leaves oblong or rotundate; calyx velvety, ... .. *B. peltata*.

\* \* Leaves not peltate.

Leaves cordate-oblong; calyx velvety, ... .. *B. elata*.

Leaves lanceolate; calyx scaly, ... .. *B. lanceolata*.

1. *B. PELTATA*, Bth. in Linn. Proc. V. Suppl. 56.

HAB. Tenasserim (Helf. 624).

Apparently merged by Masters into *B. elata* and possibly rightly so.

2. *B. ELATA*, Roxb. Corom. Pl. III. t. 265; Bot. Reg. t. 1472.

Wall. Pl. As. rar. III. 45; Hf. Ind. Fl. I. 381. (*Humea elata*, Roxb; Fl. Ind. II. 640).

HAB. Chittagong; Tenasserim, Moulmein.

3. *B. LANCEOLATA*, Bth. in Linn. Proc. V. Suppl. 57; Hf. Ind. Fl. I. 381.

HAB. Rather frequent in the tidal forests and mangrove swamps from Arracan (Akyab) and Rangoon down to Tenasserim (Moulmein). Fl. Febr.—May.

**Pentace, Hassk.**

1. *P. BURMANICA*, Kurz in Journ. As. Soc. Beng. 1871. 47; Hf. Ind. Fl. I. 381.

HAB. Frequent in the tropical forests of the eastern and southern slopes of the Pegu Yomah and Martaban down to Upper Tenasserim. Fl. Jan.; Fr. Febr. March.

**Berrya, Roxb.**

1. *B. MOLLIS*, Wall. Cat. 1186; Kurz in Journ. As. Soc. Beng. 1873. 62. (*B. Ammonilla*, var. *mollis*, Mast. in Hf. Ind. Fl. I. 383).

HAB. Not unfrequent in the drier upper mixed and hill Eng forests of Martaban and the Pegu Yomah up to 3000 ft. elevation. Fr. March.

**Columbia, Pers.***Conspectus of species.*

Leaves cordate-oblong; fruits  $\frac{1}{2}$ -1 in. across, ... .. *C. floribunda*.

Leaves lanceolate; fruits  $1\frac{1}{2}$  in. across, ... .. *C. Merguensis*.

1. *C. FLORIBUNDA*, Kurz in Journ. As. Soc. Beng. 1873. 63; Hf. Ind. Fl. I. 393. (*Grewia floribunda*, Wall. ap. Voigt (not Voight) Cat. Hort. Calc. 128).

HAB. Martaban, in Toukyeghat E. of Tounghoo; also Ava, on Taong dong. Fr. Nov. Jan.

2. *C. MERGUENSIS*, Planch. in Hf. Ind. Fl. I. 394.

HAB. Tenasserim, Mergui (Griff.)



**Grewia, L.**

*Subg. 1. Microcos.* Stigma shortly toothed. Flowers forming terminal panicles, involucred while in bud.

\* Endocarp of drupes fibrous-woody.

Leaves entire, almost coriaceous, quite glabrous; ovary and torus velvety-tomentose,  
... *G. calophylla*.

× × Endocarp of drupes crustaceous or bony.

Leaves thin chartaceous, glabrous or beneath puberulous, not sinuate; ovary and torus glabrous, ...  
... *G. microcos*.

As preceding but flowers and leaves much smaller, the latter sinuate-lobed, ... *G. sinuata*.

Leaves thick chartaceous and rugose, tomentose beneath; ovary and torus villous,  
... *G. paniculata*.

*Subg. 2. Grewia vera.* Stigmas dilated and fringed, radiating. Flowers in axillary or leaf-opposed cymes or clusters.

O Cymes or clusters axillary.

× Leaves at base 3-nerved, rarely with an additional lateral one.

† Drupes deeply 2-4-lobed from the top, by abortion sometimes 1-lobed.

Cymes and sepals shortly rusty tomentose; leaves on both surfaces very scabrous from minute stellate hairs; drupes deeply 4-lobed, ...  
... *G. scabrida*.

Cymes sprinkled with stiff hairs, glabrescent; sepals greyish or tawny velvety; leaves glabrous, or sprinkled with simple short hairs, rarely puberulous beneath; drupes didymous, ...  
... *G. lavigata*.

† † Drupes entire or only slightly and obtusely lobed at the top.

Leaves beneath and young parts greyish velvety; drupes globular, grey-pubescent,  
... *G. excelsa*.

Leaves at base 3- or 4-nerved; cymes rather long peduncled; drupes obsoletely 4-lobed red, sparingly hirsute, ...  
... *G. hirsuta*.

As preceding, but more densely pubescent or tomentose; drupes obsoletely 2-lobed, red sparingly hirsute, ...  
... *G. humilis*.

Leaves at base 3- or 4-nerved, scabrous; flowers in short dense sessile clusters; stamens 16,  
... *G. microstemma*.

× × Leaves usually broad, at base 5-7-nerved, the upper ones often only 3-nerved or 3- and 5-nerved ones mixed.

† Peduncles slender, much longer than the petioles.

Leaves obliquely lanceolate, especially while young greyish or whitish tomentose beneath,  
... *G. elastica*.

Leaves broadly obovate or almost rotundate, on both sides sprinkled with stellate hairs, or pubescent beneath, often scabrous, ...  
... *G. Asiatica*.

† † Peduncles very short or almost reduced and the flowers appearing clustered.

Leaves very variable in shape, tomentose to pubescent; drupes from the top deeply 4- or only by abortion fewer-lobed, ...  
... *G. abutilifolia*.

Leaves very scabrous and harsh; drupes the size of a cherry, almost globular,  
... *G. sclerophylla*.

O O Cymes opposite the leaves, ...  
... *G. oppositifolia*.

1. *G. CALOPHYLLA*, Kurz in And. Rep. App. B. 3; and in Flora 1872 398; Hf. Ind. Fl. I. 392.



HAB. Not uncommon in the tropical coast-forests of South Andaman. Fl. May, June.

2. *G. MICROCOS*, L. sp. pl. ed. 12. 602; Wight Ill. t. 33; Hf. Ind. Fl. I. 392. (*G. ulmifolia*, Roxb. Fl. Ind. II. 591; Wight Ic. t. 84).

HAB. Frequent all over Burma from Chittagong and Ava down to Tenasserim, in the mixed forests, especially the lower ones. Fl. Apr.—June.

Like a few other *Grewia* perplexingly variable in size and shape, here a well-shaped tree 40 to 50 ft. high, there a meagre shrub of only a few feet in height; the latter form growing chiefly on deep alluvium, in savannahs and similar localities.

3. *G. SINUATA*, Wall. Cat. 1108; Hf. Ind. Fl. I. 392.

HAB. Frequent in the swamp-forests of the Irrawaddi and Sittang alluvial plains in Pegu and Martaban; also Tenasserim as far down as Mergui. Fl. May.

Possibly only a marsh-form of the preceding.

4. *G. SCABRIDA*, Wall. Cat. 11,13. p. p.; Kurz in Journ. As. Soc. Beng. 1873. 63; Hf. Ind. Fl. I. 398, excl. syn.

HAB. Tenasserim, from Moulmein (Falconer) and Tavoy (Wall.) down to Mergui (Helf.). Fl. Sept.; Fr. Febr.

5. *G. LEVIGATA*, Vhl. Symb. I. 34; Hf. Ind. Fl. I. 389. (*G. didyma*, Roxb. Fl. Ind. III. 591).

Var. *a. GLABRA*, leaves glabrous, or tufted-hairy in the nerve-axils beneath.

Var. *β. PUBESCENS*, leaves beneath minutely puberulous or densely downy.

HAB. Var. *β.* not uncommon in the upper mixed forests all over Pegu and adjacent provinces down to Tenasserim; var. *a.* in Arracan. Fl. Sept. Oct.; Fr. March Apr.

6. *G. EXCELSA*, Vhl. Symb. III. 35; Roxb. Fl. Ind. II. 586?; Hf. Ind. Fl. I. 385. (*G. salvifolia*, Roxb. l. c. 587).

HAB. Chittagong (teste Masters).

I have not seen specimens; the occurrence of such a xeroclimatic form in Chittagong is exceptional.

7. *G. HIRSUTA*, Vhl. Symb. I. 34; DC. Prod. I. 509; Roxb. Fl. Ind. II. 587; Wight Ic. t. 76; Hf. Ind. Fl. I. 391. (*G. pilosa*, Roxb. Fl. Ind. II. 588).

Var. *a. GENUINA*, leaves green, 3-nerved, more or less sprinkled with short stiff hairs.

Var. *β. VIMINEA*, (*G. viminea*, Wall. Cat. IV), as the preceding, but the leaves longer and narrower, very long acuminate.

Var. *γ. HELICTERIFOLIA* (*G. helicterifolia*, Wall. MS.), leaves acuminate, at base 3- or almost 4-nerved, thinly hirsute or tomentose above, beneath clothed with a whitish velvety tomentum.





HAB. Var.  $\alpha$ . and  $\beta$ . frequent all over Burmah in the mixed forests, especially in the upper ones; var.  $\gamma$ . not yet found. Fl. H. and R. S.; Fr. C. S.

8. *G. HUMILIS*, Wall. ap. Voigt Cat. Hort. Beng. 128; Hf. Ind. Fl. I. 390.

Var.  $\alpha$ . WALLICHII, tomentum more villous, leaves acute.

Var.  $\beta$ . RETUSIFOLIA, (*G. retusifolia*, Kurz in Journ. As. Soc. Beng. 1872. 294), tomentum velvety; leaves deeply retuse and broader.

HAB. Var.  $\alpha$ . Ava, Segain hills (Wall.); var.  $\beta$ . not unfrequent in savannahs, especially along the borders of swamp forests of the Irrawaddi alluvium in Pegu. Fr. C. S.

The drupes are normally 4-lobed, but by abortion usually 2- rarely 1- or 3-lobed. The species is hardly more than an extreme form of *G. hirsuta*, Vhl.

9. *G. MICROSTEMMA*, Wall. ap. Voigt Cat. Hort. Calc. 128; Kurz in Journ. As. Soc. Beng. 1873. 63; Hf. Ind. Fl. I. 390.

HAB. Ava; Prome hills (Wall.) Fl. Sept. Oct.

10. *G. ELASTICA*, Royle Ill. Him. Pl. 104. t. 22; Walp. Rep. I. 361. (*G. asiatica*, var. *vestita*, Mast. in Hf. Ind. Fl. I. 387.)

HAB. Frequent in the upper mixed forests of the Pegu Yomah and Martaban; also Chittagong. Fl. Nov. Decb.

11. *G. ASIATICA*, L. Mant. 122; Roxb. Fl. Ind. II. 586; Hf. Ind. Fl. I. 386.

Var.  $\beta$ . NANA, (*G. nana*, Wall. Cat. 1102), stunted and low, possibly the result of jungle fires.

HAB. Only the stunted variety appears to grow in Burma (Griff. 656) probably Ava?

12. *G. TILIEFOLIA*, Vhl. Symb. I. 35; Roxb. Fl. Ind. II. 587; Bedd. Fl. Sylv. Madr. t. 108; Hf. Ind. Fl. I. 386.

HAB. Birma (teste Masters).

13. *G. ABUTILIFOLIA*, Juss. Ann. II. 92; DC. Prod. I. 511; WA. Prod. I. 79? Miq. Fl. Ind. Bat. I/2. 201; Hf. Ind. Fl. I. 390. (*G. aspera*, Roxb. Fl. Ind. II. 591).

Var.  $\alpha$ . ASPERA, (*G. aspera*, Roxb. l. c.) leaves all rotundate and often somewhat lobed towards the summit; sepals only  $2\frac{1}{2}$  lin. long or a little longer, pubescent from stiff appressed hairs; petals  $\frac{1}{2}$  lin. long; bracteoles short, oblong, acute. A low shrub, 2 to 3, often only  $\frac{1}{2}$  foot high, the tomentum usually short.

Var.  $\beta$ . VIRIDESCENS, as the preceding, but the leaves of a very thin chartaceous texture and very large, green, acuminate, above hirsute from simple, beneath from stellate, tawny hairs; flowers usually larger; sepals tawny pubescent; petals as in the preceding variety, but the lamina more acute; ripe drupes glabrous. Low shrub, 2-3 ft. high.



Var.  $\gamma$ . *sclerophylloides*, a low shrub, 3-4 ft. high, more or less branched, the younger parts densely rusty-coloured villous; leaves very variable in shape on the same branch, the lower ones usually ovate-oblong, up to nearly one foot long, the upper and uppermost ones gradually smaller and narrower, from ovate to lanceolate, doubly and sometimes bristly serrate, acuminate, scabrous or thinly pubescent above, beneath more or less stellate-pubescent or almost tomentose; bracteoles linear-lanceolate, acuminate, pubescent externally, longer or as long as the flower-buds; petals a line long, the lamina acuminate, pubescent outside; drupes deeply 4-lobed, often remaining sparingly hirsute during ripeness. A laterite form.

HAB. Var.  $\alpha$ . Pegu (Col. Eyre); var.  $\beta$ . not unfrequent in the upper mixed forests of the Pegu Yomah; var.  $\gamma$ . frequent in the open, especially the low and Eng forests of Pegu, Prome and Martaban. Fl. May.

A very variable plant of which I entertained some hope of being able to separate var  $\gamma$ . (which is also a common Assam plant) specifically. It resembles in size of flowers *G. sclerophylla*, but the deeply 4-lobed drupes at once separate it.

14. *G. SCLEROPHYLLA*, Wall. Cat. 1095; Wight Ic. t. 89. (*G. scabrophylla*, Roxb. Fl. Ind. II. 584 [nomen latino-græcum]; Hf. Ind. Fl. I. 387).

HAB. Ava and Chittagong (teste Masters).

#### *Doubtful species.*

1. *G. lanceolata*, Roxb. Fl. Ind. II. 586.

HAB. Chittagong (Roxb.)

Possibly the same as *G. viminea*, Wall.

#### *Triumfetta, L.*

##### *Conspectus of species.*

*Sect. 1. Lappula.* Capsules indehiscent or nearly so, globular, echinate, the cells usually 1-seeded.

Leaves rotundate, not lobed, blunt, beneath greyish-tomentose like the sepals,

... *T. rotundifolia*.

Leaves rotundate, acuminate, often lobed; the sepals stellate-hairy, ... *T. rhomboidea*.

*Sect. 2. Bartramia.* Capsules when ripe separating into 3-4 cocci, densely covered by long bristles, the cells usually 2-seeded.

Leaves slightly hirsute; capsules and bristles glabrous, ... *T. annua*.

Leaves at least beneath densely tomentose or pubescent; capsules tomentose, the bristles more or less pilose, straight or curved, ... *T. pilosa*.

1. *T. RHOMBOIDEA*, Jacq. Am. 147. t. 90; Mast. Fl. Trop. Afr. I. 257 and Hf. Ind. Fl. I. 395. (*T. angulata*, Lamk. Dict. III. 41; Wight Ic. t. 320; *T. Bartramia*, Roxb. Fl. Ind. II. 463; *T. cana*, Bl. Bydr. 116, non Mast.).





HAB. A common weed not only in cultivated lands but also in all leaf-shedding forests all over Burma and adjacent provinces. Fl. R. and C. S.; Fr. C. S.

2. *T. semitriloba*, L. Mant. 73; Hf. Ind. Fl. I. 396.

HAB. Tenasserim, Tavoy (teste Masters).

3. *T. ROTUNDIFOLIA*, Lamk. Dict III. 421; Hf. Ind. Fl. I. 395.

HAB. Ava (Wall.)

4. *T. ANNUA*, L. Mant. 73; Bot. Mag. t. 2296; Hf. Ind. Fl. I. 396

HAB. Not unfrequent in the upper-mixed and dry forests all over Pegu, also frequent in deserted hill-toungyas; Ava. Fr. Nov.—Febr.

5. *T. PILOSA*, Roth Nov. sp. 223; Hf. Ind. Fl. I. 394.

Var.  $\beta$ . *OBLONGA*, (*T. oblonga*, Wall. in Don I. Prod. Rep. 227; *T. tomentosa*, Mast. in Hf. Ind. Fl. I. 394, non Boj.; *T. octandra*, Griff. Nat. Dicot. 512?) the bristles of the carpels somewhat shorter and straight or nearly so.

HAB. Var.  $\beta$ . common all over Burma and adjacent provinces, in the mixed forests and deserted toungyas. Fr. Nov. Jan.

Masters, in Fl. trop. Afr. and Fl. Ind., identifies var.  $\beta$ . of this species with *T. tomentosa*, Boj. The Mauritian plant, which for a long time was cultivated in H.B.C. but is now apparently lost, has a velvety tomentum and small globular fruits not larger than those of *T. rhomboidea*, while Masters describes them as being as large as a cherry.

#### *Doubtful species.*

1. *T. CANA*, Masters in Hf. Ind. Fl. I. 396, non Bl.

HAB. Chittagong (teste Masters).

### **Corchorus, L.**

#### *Conspectus of species.*

§ 1. Capsules globular or nearly so, more or less muricate.

Lower pairs of serratures of leaves produced into five bristles: capsules 10-sulcate, truncate, ... .. *C. capsularis*.

§ 2. Capsules more or less elongate or linear, cylindrical or angular, but not winged.

• Capsules 1 to 2 in. long or longer. Stamens very numerous.

O Lower pair of serratures of leaves produced into long bristles.

Capsules 2 in. long, 5-celled and 5-ribbed, longitudinally pitted, the partitions within very distinct, ... .. *C. olitorius*.

O O Leaves without basal bristles, usually small and blunt.

Capsules about 2 in. long, sparingly and minutely tubercled, glabrous, simply beaked, ... .. *C. 3-locularis*.

As preceding, but capsules only about 1 in. long, thinly pilose, ... .. *C. urticifolius*.

Capsules 1-1½ in. long, almost terete, not wrinkled, 3-4-celled, 3-4-toothed at apex, without partitions inside, ... .. *C. trideus*.

• • Capsules about ½ in. long. Stamens 5 to 10.



Capsules almost terete, tomentose, 3-celled, without partitions inside, ... *C. fascicularis*.

§ 3. Capsules elongate, thick, truncate, 6-angled, the alternate angles winged. Stamens 15 to 20. Leaves without bristles. Capsules  $\frac{1}{4}$ —1 in. long, terminating in 3 simple or 2-cleft spreading points, ... *C. acutangulus*.

1. *C. CAPSULARIS*, L. sp. pl. 746; Roxb. Fl. Ind. II. 581; Wight Ic. t. 311; Hook. Journ. Bot. II. 92. t. 3, Hf. Ind. Fl. I. 397.

HAB. Cultivated all over Burma, and frequently seen in deserted toungyas, along the borders of forests, around villages, etc. Fl. C. S.; Fr. H. S.

2. *C. OLITORIUS*, L. sp. pl. 746; Roxb. Fl. Ind. II. 581; Bot. Mag. t. 2810; Griff. Not. Dicot. 512; Hf. Ind. Fl. I. 397. (*C. decemangularis*, Roxb. l. c. 582).

HAB. Ava, Pegu, cultivated and wild in rubbishy places and agrarian lands. Fl. R. S.; Fr. C. S.

3. *C. TRILOCULARIS*, L. Mant. 77; Roxb. Fl. Ind. II. 582; Hf. Ind. Fl. I. 397.

HAB. Burma (according to Dr. Mason).

4. *C. URTICÆFOLIUS*, WA. Prod. I. 73; Hf. Ind. Fl. I. 397.

HAB. Ava (Wall.).

5. *C. TRIDENS*, L. Mant. 566; Hf. Ind. Fl. I. 398. (*C. trilocularis*, Burm. Fl. Ind. t. 37. f. 2).

HAB. Prome District (Wall.).

6. *C. FASCICULARIS*, Lamk. Dict. II. 104; Roxb. Fl. Ind. II. 582; Hf. Ind. Fl. I. 398.

HAB. Not unfrequent in dried up river-beds in the swamp forests and savannahs between the Lhein and Irrawaddi rivers in Pegu. Fr. C. S.

7. *C. ACUTANGULUS*, Lamk. Dict. II. 104; Wight Ic. t. 739; Hf. Ind. Fl. I. 398. (*C. fuscus*, Roxb. Fl. Ind. II. 582).

HAB. Very frequent not only in rubbishy places, deserted toungyas, etc., but also in the leaf-shedding forests, all over Burma up to 3000 feet elevation. Fl. R. S.; Fr. C. S.

### **Echinocarpus, Bl.**

#### *Conspectus of species.*

Leaves entire, tufted-hairy in the nerve-axils beneath; prickles of fruit strong, usually thickened at base, ... *E. Sigun*.

Leaves crenate-serrate or toothed, at least when young puberulous beneath, the prickles longer, all thin and subulate, ... *E. sterculiaceus*.

1. *E. SIGUN*, Bl. Bydr. 56; Miq. Fl. Ind. Bat. I/2. 109. (*E. murex*, Bth. in Linn. Proc. V. Suppl. 72; Hf. Ind. Fl. I. 399).

HAB. Tenasserim, Thoungyeen, Ta-oo-road (Brandis). Fr. Apr.



Masters states that the prickles of *E. murex* are dilated at the base; the Khasya specimens No. 5. Hb. or. Hf. and Th., however, exhibit not a vestige of dilatation being simply incrassate at base just as those of the Javanese plant. The *sigún* is a common tree in the hill-forests of western Java and there well-known to Dutch botanists.

2. *E. STERCULIACEUS*, Bth. in Linn. Proc. V. Suppl. 72; Hf. Ind. Fl. I. 400.

HAB. Not unfrequent in the drier hill-forests of Martaban; Tenasserim, Moulmein District (Falconer); Birma (Griff. 675).

### *Elæocarpus*, L.

#### *Conspectus of species.*

*Subg. 1. Monoceras.* Anthers cuspidate or aristate. Flowers usually rather large, the petals silky-hairy, fringed or very rarely entire.

- \* Petals entire with a few short teeth at apex or simply fringed, not cut or cleft. Petioles continuous, not geniculate-incrassate.

O Inflorescence and sepals outside almost glabrous.

All parts glabrous, ... .. *...E. petiolatus.*

O O Inflorescence and sepals outside silky-pubescent.

Glabrous; petals entire, acuminate; pedicels  $\frac{3}{4}$ - $\frac{1}{2}$  in. long, ... .. *...E. Griffithii.*

Glabrous; petals deeply but simply fringed; pedicels 3-4 lin. long, ... .. *...E. Varunua.*

- \* \* Petals 2-3-cleft, the lobes jagged or fringed; anthers glabrous or puberulous.

O Petiole geniculate-thickened at apex.

† Inflorescence with long-persistent leafy bracts.

All parts also sepals and inflorescence glabrous, ... .. *...E. bracteatus.*

† † Bracts of inflorescence small, very deciduous.

× Racemes and sepals glabrous or nearly so, ... .. *...E. simplex.*

× × Racemes and sepals more or less tomentose or pubescent.

Leaves 1-1½ ft. long, cuneate-acuminate at base, acute; anthers shorter than the bristle; drupes puberulous, the putamen slightly compressed, ... .. *...E. grandifolius.*

Leaves ½-1 ft. long, rounded at the narrowed base; leaves glabrous or nearly so; putamen terete, ... .. *...E. rugosus.*

O O Petiole continuous, not geniculate-thickened at apex.

Glabrous. Putamen long recurved-aculeate, ... .. *...E. grandiflorus.*

Putamen lacunose-tubercled; leaves blunt, very thick coriaceous, glabrous, ... .. *E. littoralis.*

*Subg. 2. Elæocarpi veri.* Anthers blunt, or the longer valve sharply produced; flowers small; petals glabrous.

† Putamen even and usually slightly rimose, or obsoletely wrinkled.

Calyx and pedicels glabrous.

Leaves glabrous, blistered-speckled and opaque; petioles long, thickened at the summit; anthers bearded, ... .. *...E. floribundus.*

Leaves glabrous, opaque, acuminate; petiole not geniculate-thickened, ... .. *...E. lanceaefolius.*

Leaves glabrous, blunt or rounded at apex; petioles short but slender, not thickened; anthers naked; drupes unknown, ... .. *...E. hygrophilus.*

† † Putamen wrinkled or tubercled. Calyx and pedicels puberulous.

× Petioles not geniculate-thickened at apex.



Leaves and petioles glabrous; style long, exerted; the longer anther-cell acute; drupes globular, ... .. *E. ganitrus*.

Leaves beneath along the nerves and the short petioles densely puberulous; style short; anther-cells equal, blunt; drupes oblong, ... .. *E. lacunosus*.

× × Petioles thickened at summit.

Leaves beneath and the rather short petioles densely puberulous, .. *E. Wallichii*.

Leaves and the long petioles glabrous; drupes oblong, ... .. *E. robustus*.

All parts densely and shortly pubescent; drupe globular, ... .. *E. stipularis*.

1. *E. GRIFFITHII*, Kurz in Journ. As. Soc. Beng. 1870. 68; Hf. Ind. Fl. I. 408. (*Monoceras trichanthera*, Griff. Not. Dicot. 518 t. 619. f. 2).

HAB. Tenasserim, Mergui, in shrubberies (Griff.). Fl. Dec. Jan.

2. *E. PETIOLATUS*, (*Monocera petiolata*, Jack. Mal. Misc. in Hook. Bot. Misc. II. 86; *E. integra*, Wall. Cat. 2668; Hf. Ind. Fl. I. 408; *E. ovalis*, Miq. in Suppl. Fl. Sum. 406).

HAB. Tenasserim (Helf. teste Masters).

3. *E. BRACTEATUS*, Kurz in Journ. As. Soc. 1871. 48; Hf. Ind. Fl. I. 406).

HAB. Tenasserim, in tropical forests of Thoungyeen (Brandis); Moulmein (Falconer). Fl. March, Apr.

4. *E. simplex*, Kurz MS.

HAB. Tenasserim (Griff. 701).

Evidently nearly allied to *E. aristatus*, Roxb. but differing in the shape of the leaves and the glabrous racemes. The flowers conform to those of the preceding species. Griffith's specimens from E. Bengal (No. 702) differ only by a puberulous inflorescence and may also belong here.

5. *E. GRANDIFLORUS*, Smith in Rees Cycl. No. 5. (*Monoceras lanceolatum*, Hassk. Cat. Bog. 208; Miq. Fl. Ind. Bat. I/2. 212; *Monocera grandiflora*, Hook. Bot. Mag. t. 4680; *E. lanceolatus*, Bl. Bydr. 129).

HAB. Martaban, not rare along the banks of rivers in Toukyeghat District E. of Tounghoo.

6. *E. GRANDIFOLIUS*, Kurz in Journ. As. Soc. Beng. 1872, 294.

HAB. Frequent in the tropical forests of the eastern slopes of the Pegu Yomah and Martaban down to Tenasserim. Fr. Febr. March.

7. *E. RUGOSA*, Roxb. Fl. Ind. II. 596; Wall. Cat. 2658. A. C.; Hf. Ind. Fl. I. 405. (*Monocera rugosa*, Wight Ill. I. 83 and Ic. t. 61).

HAB. Frequent in the tropical forests, especially along choungs, of the eastern slopes of the Pegu Yomah and Martaban. Fl. March, Apr.

Masters refers Wallich's *E. rugosus* to *E. tuberculatus*, Roxb. without giving his reasons for so doing.

8. *E. LITTORALIS*. T. and B. MS.

HAB. Tenasserim, Moulmein (Falconer). Fr. Febr.

N. B.—What I have from the Botanical Gardens, Buitenzorg, under



the name of *Monoceras obtusum*, Hassk. belongs to *E. rugosus*. The Tenasserim plant (with which Griffith's No. 700 is identical) has very thick and obtuse leaves, and is in my opinion a distinct species. I have therefore retained the MS. name of Teysm. and Binnend. for the plant.

9. *E. VARUNUA*, Ham. ap. Hf. Ind. Fl. I. 407.

HAB. Chittagong (teste Masters).

Differs from *E. prunifolius*, Wall. solely by the silvery silk-hairy inflorescence and larger flowers.

10. *E. FLORIBUNDUS*, Bl. Bydr. 120; Miq. Fl. Ind. Bat. I/2. 210; Hf. Ind. Fl. I. 401. (*E. serratus*, Roxb. Fl. Ind. II. 596).

HAB. Frequent in the tropical forests, along choungs, of the Martaban hills E. of Tounghoo down to Tenasserim; also Chittagong. Fl. Apr.

The species is easily recognised in a dried state by its peculiar blistered opaque leaves.

11. *E. HYGROPHILUS*, Kurz, MS.

HAB. Frequent in the swamp forests of the alluvial plains of Pegu and Martaban; also Upper Tenasserim (Falc.) Fl. Jan. March.

I looked for some time upon this species as a variety of *E. photiniæ-folius*, but the habitat as well as the structure of the leaves are inconsistent with such a view. It is nearest to *E. lanceæfolius*, Roxb., but differs by obtuse or rounded leaves and beardless anthers.

12. *E. LANCEÆFOLIUS*, Roxb. Fl. Ind. II. 598; Hf. Ind. Fl. I. 402.

HAB. Tenasserim (teste Masters.)

13. *E. GANITRUS*, Roxb. Fl. Ind. II. 592; Hf. Ind. Fl. I. 400. (*Ganitrus sphaericus*, Gærtn. fruct. II. 271. t. 139; Wight Ic. t. 66; *E. cyanocarpus*, Mast. in Hf. Ind. Fl. I. 406).

HAB. Chittagong.

14. *E. LACUNOSUS*, Wall. Cat. 6858.

HAB. Not unfrequent in the tropical forests and along choungs in the moister upper mixed forests of Pegu and Martaban down to Tenasserim. Fl. May, July; Fr. March, Apr.

15. *E. WALLICHII*, (*E. longifolius*, Wall. Cat. 6682; Hf. Ind. Fl. I. 409. non Bl.)

HAB. Not unfrequent in the Eng and low forests from Martaban (Toukyeghat) down to Upper Tenasserim; also base of Pegu Yomah; Ava (Wall.)

I have often met with the tree, but always without flowers or fruit. The leaves generally resemble *E. Ganitrus* but are puberulous all over or, in very old ones, only beneath along the nerves, and so are the petioles and branchlets. It appears to be a distinct species.

16. *E. ROBUSTUS*, Roxb. Fl. Ind. II. 597; Wight Ic. t. 64; Hf. Ind. Fl. I. 402. (*E. Helferii*, Kurz And. Rep. ed. 2. 32. and Mast. in. Hf.



Ind. Fl. I. 402 E. sp. Griff. Not. Dicot. 517. t. 592. f. 2).

HAB. Frequent in the tropical forests of Martaban and Tenasserim; also Andamans; and Chittagong (teste Mast.) Fl. Apr. May; Fr. Aug.

N. B.—*E. cuneatus*, Wight, is noted by Masters as growing in Chittagong, Birma, and Tenasserim. I do not know the species. Possibly the Burmese localities refer to *E. lacunosus*, Wall.

17. E. STIPULARIS, Bl. Bydr. 121; Miq. Fl. Ind. Bat. I/2 210; Hf. Ind. Fl. I. 404.

HAB. In tropical forests of Martaban and Tenasserim, up to 3000 feet elevation; also Rangoon District (Brandis). Fl. May.

### *Doubtful species.*

1. E. LEPTOSTACHYA, Wall. Cat. 2672; Hf. Ind. Fl. I. 403.

HAB. Tenasserim (Helf. teste Mast.).

Masters states that the species is very like *E. robustus* but that the anthers are bearded, while in *E. robustus* itself he tells us that the anthers are both bearded and beardless.

2. E. LUCIDUS, Mast. in. Hf. Ind. Fl. I. 403, non Roxb.

HAB. Chittagong (Griff. teste Mast.).

Masters identifies his specimens with Roxburgh's plant, which the late Dr. Anderson had already recognised as an *Euphorbiacea* and which is *Cleidion Javanicum*, Bl. I doubt the correctness of the habitat given for the reason that Griffith had never visited Chittagong.

I have not seen *E. oblongus*, Gært. from Moulmein.

## LINEÆ.

### *Conspectus of species.*

*Trib. I. EULINEÆ.* Petals twisted. Perfect stamens as many as petals. Capsule opening septicidally. Herbs or small shrubs.

1. REINWARDTIA. Calyx glabrous. Styles 3 or 4. Capsule 3-4-celled.

2. LINUM. Calyx glabrous or pubescent. Styles 5. Capsule 5-celled.

*Trib. II. ERYTHROXYLEÆ.* Petals usually imbricate, rarely twisted, with a basal scale inside. Perfect stamens twice as many as petals. Fruit a drupe. Shrubs or trees.

3. ERYTHROXYLON. Petals with a double basal scale inside. Pedicels 1-flowered, axillary.

### *Reinwardtia, Dum.*

1. R. INDICA, Dum. Comm. Bot. 1822. 19. (*R. trigyna*, Planch. in Hook. Journ. of Bot. VII. 522; Hf. Ind. Fl. I. 412.; *Linum trigynum*, Roxb. Fl. Ind. II. 1832. 110; Bot. Mag. t. 1100; Sm. Exot. Bot. 31. t. 17; *Linum repens*, Don. Prod. Nep. 1826. 217).

HAB. Martaban, Karen country (Riley); Chittagong.



**Erythroxylon, L.***Conspectus of species.*

§ 1. *Erythroxylon*. Styles free from the base.

Leaves oblong lanceolate, shortly acuminate glaucescent beneath; pedicels about  $\frac{1}{4}$  in. long, ... *E. Kunthianum*.

§ 2. *Sethia*. Styles united for about  $\frac{1}{2}$  of their length.

Leaves obovate or oblong, blunt; pedicels usually 3 lin. long, rarely longer,

... *E. monogynum*.

Leaves broadly obovate or oblong, retuse; pedicels short, ... *E. cuneatum*.

1. *E. KUNTHIANUM*, Kurz in Journ. As. Soc. Beng. 1872. 294; Hf. Ind. Fl. I. 414. (*Sethia? Kunthiana*, Wall. Cat. 6849, nomen chartaceum).

HAB. Not unfrequent in the drier hill-forests, especially the stunted ones, on the Martaban hills E. of Tounghoo, at 5000 to 7200 ft. elevation; also Tenasserim, top of Thoungyeen hills, (Parish). Fl. March.

2. *E. MONOGYNUM*, Roxb. Corom. Pl. I. t. 88. and Fl. Ind. II. 449; Hf. Ind. Fl. I. 414. (*E. Indicum*, Bedd. Fl. Sylv. Madr. t. 81; *Sethia Indica*, DC. Prod. I. 576; Wight Ill. t. 48).

HAB. Pegu (accord. Dr. Mason).

3. *E. CUNEATUM*, (*Urostigma? cuneatum*, Miq. in Hook. Lond. Journ. VI. 585; *E. Burmannicum*, Griff. Not. Dicot. 468. t. 581. f. 3.; Hf. Ind. Fl. I. 414).

HAB. Tenasserim, from Moulmein (Falconer, Wall.) down to Mergui, along the coast of Madamaca (Griff.). Fl. Apr.

**MALPIGHIACEÆ.***Conspectus of genera.*

**Trib. I. MALPIGHIEÆ.** Carpels never winged, free or united into a fleshy or drupaceous 1- to 3-celled fruit. Usually erect shrubs, with usually opposite leaves and connate stipules.

1. **MALPIGHIA.** Calyx 6-10-glandular. Filaments at base glabrous. Ovary entire, 2-3-celled, styles terminal and free. Drupes containing 3 or fewer crested nuts.

**Trib. II. HIREÆ.** Samaras 1-3, obliquely accumbent to a short pyramidal torus, or the carpels united into a winged indehiscent capsule. Woody climber or rarely erect shrubs or trees, the stipules minute or wanting.

\* Stamens definite, usually 10, all perfect.

O Style 1, rarely 2.

2. **HIPTAGE.** Calyx with a single large gland adnate to the pedicel. Carpels 3-winged. Trees or woody climbers.

O O Styles 3. Calyx without glands.

3. **ASPIDOPTERYS.** Petals not clawed. Stigmas capitellate. Samaras broadly winged all round. Woody climbers.

\* \* Stamens numerous. Styles 3, consolidated. Calyx minute, without glands.

4. **PLAGIOPTERON.** Capsules indehiscent, 3-4-winged as in *Hiptage*. Petals reflexed. Woody climbers.



**Malpighia. L.**

\*1. *M. COCCIGERA*, L. sp. pl. 611. (*M. coccifera*, L. sp. pl. ed. Rehb. II. 371 ; DC. Prod. I. 578 ; Walp. Rep. V. 152 ; Bot. Reg. t. 568. *M. heteranthera*, Wight Ill. 138. t. 49).

HAB. Frequently cultivated, and sometimes domesticated in rubbishy places round villages in Chittagong. Fl. H. and R. S. ; Fr. R. S.

**Hiptage, Gærtn.***Conspectus of species.*

Scandent diffuse shrub, branched almost from the base ; leaves larger, more acute and greyish green ; bark grey, ... .. *H. Benghalensis*.

A lofty climber, the stem simple, cable-like, up to 100 ft. long ; leaves smaller and broader, often bluntish apiculate, glabrous and glossy, dark-green ; bark dark-brown, ... *H. obtusifolia*.

A small tree ; flowers often pale pink with the usual yellow basal blotch ; capsule not ridged on top, the wings shorter and broader, obliquely truncate ; bark dark-brown, ... .. *H. candicans*.

1. *H. BENGHALENSIS*, (*Banisteria Benghalensis*, L. sp. pl. 356 ; *H. Madablota*, Gærtn. Fr. II. 169. t. 116. f. 4 ; Wight Ill. t. 50 ; Hf. Ind. Fl. I. 418 ; *Gærtnera racemosa*, Roxb. Corom. Pl. I. t. 18 and Fl. Ind. II. 368).

HAB. Not unfrequent in the dry and open, especially the Eng, forests of Prome and Martaban ; also Tenasserim, Moulmein. Fl. March, Apr ; Fr. Apr. May.

2. *H. obtusifolia*, DC. Prod. I. 583. (*Gærtnera obtusifolia*, Roxb. Fl. Ind. II. 369).

HAB. Rather rare in the tropical forests in the deep ravines of the Pegu Yomah. Also Ava, Khakyen hills (J. Anderson) Fl. March.

It is difficult to give good characters for this species, but it is in my opinion certainly distinct.

3. *H. CANDICANS*, Hf. Ind. Fl. I. 419. (*H. arborea*, Kurz in Pegu Rep. and in Journ. As. Soc. Beng. 1873. 228).

HAB. Frequent in the dry and eng forests of the Prome District and there forming the upper dry forests. Fl. March ; Fr. March, Apr.

**Aspidopterys, A. Juss.***Conspectus of species.*

\* Gynobase persistent after the fall of the samaras, conical, acute, exserted, surrounded by 3 smooth acute disk-lobes.

Leaves tomentose beneath, acuminate ; ovary hirsute ; nucleus of samara with or without a crest, ... .. *A. nutans*.

Leaves tomentose beneath, more or less glabrescent, apiculate ; ovary quite glabrous ; nucleus of samara with a crest, ... .. *A. tomentosa*.





- \* \* Gynobase absent after the fall of the samaras or minute and shorter than the disk-lobes, the thick 3-lobed often cup-shaped disk usually wrinkled.

× Samara nearly as broad as long, with a vertical crest between the wings. All parts, also the ovary, quite glabrous; disk in fruit about 1 lin. broad, ... *A. concava*. Leaves more or less puberulous along the nerves beneath; disk doubly smaller, hardly wrinkled, ... .. *A. Helferi*.

× × Samara more than twice as long as broad, not crested. All parts glabrous; ovary hirsute, ... .. *A. Roxburghii*. All parts hirsute; ovary glabrous, ... .. *A. hirsuta*.

1. *A. NUTANS*, Hf Ind. Fl. I. 421, non Juss. (*A. lanuginosa*, A. Juss. in Arch. Mus. Nat. Hist. III. 512; *Hiræa nutans*, Roxb. Fl. Ind. II. 447, non Wall.).

HAB. Chittagong (Wall. 1057); Ava, Bhamo (J. Anderson). Fr. Jan.

2. *A. TOMENTOSA*, A. Juss. in Arch. Mus. Hist. Nat. III. 514; Walp. Rep. V. 299. (*Hiræa tomentosa*, Bl. Bydr. 225).

HAB. Not unfrequent in the tropical forests of Martaban E. of Tounghoo; Ava, Khakyen hills (J. Anderson). Fl. March; Fr. May.

3. *A. CONCAVA*, A. Juss. in Arch. Mus. Hist. Nat. III. 509; Hf. Ind. Fl. I. 420.

HAB. Tenasserim, from Moulmein to Mergui. Fl. Fr. Apr.

4. *A. HELPERIANA*, Kurz MS.

HAB. Tenasserim, Moulmein district (Falc., Helf. No. 923.) Phanoë (Wall. No. 1057 not in Cat.) Fl. Febr.

Nearest to *A. concava*, from which it is distinguished by the different leaves and structure of the retuse-narrowed samara-wings, the smaller almost not wrinkled disk-lobes, etc.

5. *A. ROXBURGHIANA*, A. Juss. in Arch. Hist. Nat. III. 511; Hf. Ind. Fl. I. 420. (*Triopteris Indica*, Willd.; Roxb. Corom. Pl. II. 32. t. 160; *Hiræa Indica*, Roxb. Fl. Ind. II. 247).

HAB. Ava; (Tenasserim, Salween river, teste Hf.).

6. *A. HIRSUTA*, A. Juss. in Arch. Mus. Hist. Nat. III. 512. t. 17; Hf. Ind. Fl. I. 421. (*Hiræa hirsuta*, Wall. Pl. As. rar. I. 13. t. 13).

HAB. Ava, Taong-dong; Prome hills. (Wall.) Fl. Fr. Aug. Nov.

#### *Doubtful species.*

1. *A. ROTUNDIFOLIA*, A. Juss. in Arch. Mus. Hist. Nat. III. 514; Walp. Rep. V. 299. (*Hiræa rotundifolia*, Roxb. Fl. Ind. II. 448).

HAB. Chittagong (Roxb.) Fl. March, Apr.

Hooker refers this species to his *A. nutans*, but the description agrees better with *A. tomentosa*.



**Plagiopteron, Griff.**

1. *P. SUAVEOLENS*, Griff. in Macl. Calc. Journ. IV. 244. t. 13; Hf. Ind. Fl. I. 399.

HAB. Tenasserim, Mergui (Griff. 679).

**ZYGOPHYLLÆ.***Conspectus of genera.*

1. **TRIBULUS**. Stamens 10. Fruits dry, composed of 5-12 cocci usually winged or spiny. Herbs with pinnate leaves.

**Tribulus, L.***Conspectus of species.*

Flowers 1-2 in. in diameter, the peduncles as long or longer than the leaves, *T. cistoides*.  
Flowers  $\frac{1}{2}$ - $\frac{3}{4}$  in. in diameter, the peduncles shorter than the leaves, ... *T. lanuginosus*.

1. *T. cistoides*, L. sp. pl. 554; Jacq. Hort. Schœnb. I. t. 103; Bot. Reg. t. 791; Hf. Ind. Fl. I. 423.

HAB. Tenasserim, Mergui (teste Edgew. and Hf.).

2. *T. LANUGINOSUS*, L. sp. pl. 553; Roxb. Fl. Ind. II. 401; Wight Ic. t. 98. (*T. terrestris*, L. sp. pl. 554; Sibth. Fl. Græc. t. 372; Rehb. Fl. Germ. V. t. 161; Hf. Ind. Fl. 423).

HAB. Ava, apparently frequent in the Irrawaddi valley; Prome District. Fl. March, Apr.

N. B.—I am not sure whether *T. terrestris*, L. and *T. lanuginosus* are not really different species.

**GERANIACEÆ.***Conspectus of genera.*

*Trib. I. GERANIÆ.* Flowers regular or nearly so. Sepals imbricate. Glands alternating with the petals. Fertile stamens as many or 2 or 3 times as many as petals. Capsules dry, the valves elastically rolled upwards, or rarely indehiscent.

1. **GERANIUM**. Perfect stamens 10, or rarely fewer. Ovary-cells 2-ovuled. Capsule dehiscent, beaked.

*Trib. II. OXALIDÆ.* Flowers regular. Sepals imbricate. Glands none. Stigmas capitate. Ovary-cells with 2 or more ovules.

\* Capsule dry or nearly so, dehiscent. Herbs.

2. **OXALIS**. Stamens 10. Capsule dehiscing loculicidally, the valves cohering with the axis. Leaves usually digitately compound.

3. **BIOPHYTUM**. Stamens 10. Capsule dehiscing loculicidally, the valves usually separating from the axis to the base. Leaves pinnate.

\* \* Berry fleshy, indehiscent. Shrubs or trees.

4. **AVERRHOA**. Stamens 10, of which 5 often reduced to staminods. Styles distinct. Ovary-cells many-ovuled. Seeds arillate or without arillus. Trees with pinnate leaves.

*Trib. III. BALSAMINÆ.* Flowers regular. Sepals usually coloured, the posticous spurred. Anthers almost connate.





5. IMPATIENS. The lateral petals connate in pairs. Capsule elastically dehiscent.  
 6. HYDROCEA. All petals free. Drupes sappy, indehiscent.

### Oxalis, L.

1. *O. CORNICULATA*, L. sp. pl. 624; Roxb. Fl. Ind. II. 457; Wight Ic. t. 18; Jacq. Oxal. t. 5; Fl. Dan. V. t. 873 and X. t. 1753; Engl. Bot. XXIV. t. 1726; Sibth. Fl. Græc. t. 451; Sturm. Germ. Fl. I. t. 1; Rehb. Fl. Germ. V. t. 199; Hf. Ind. Fl. I. 436. (*O. pusilla*, Salisb. in Linn. Trans. II. 243; Roxb. Fl. Ind. II. 457).

HAB. Frequent in rubbishy places, toungyas, garden-lands, along roadsides, etc., all over Burmah up to 3500 ft. elevation Fl. Fr.  $\infty$ .

### Biophytum, DC.

#### Conspectus of species.

Leaflets nearly straight, in 10-14 pairs; flowers larger; capsule usually much shorter than the calyx; seeds obliquely transverse-furrowed, ... *B. sensitivum*.  
 Leaflets very unequal at base, in 12-25 pairs; peduncles with a clubbed mass of bracts at apex, ... *B. adiantoides*.  
 Leaflets equal, in 10-20 pairs; flowers smaller; capsule almost as long as or a little longer than the sepals, small; slender herb, ... *B. Reinwardtii*.

1. *B. SENSITIVUM*, DC. Prod. I. 690; Wight Ill. t. 62. f. 9; Hf. Ind. Fl. 436. (*Oxalis sensitiva*, L. sp. pl. 622; Roxb. Fl. Ind. II. 457; Bot. Reg. XXXI. t. 68; Jacq. Oxal. t. 78; *B. Candolleanum*, Wight Ill. t. 62).

HAB. Frequent in rubbishy places, on brick-laid paths, fields and toungyas, etc., all over Burma. Fl. May, June; Fr. R. S.

2. *B. ADIANTOIDES*, Wight ap. Hf. Ind. Fl. I. 437.

HAB. Tenasserim, Mergui (Griff.).

3. *B. REINWARDTII*, Walp. Rep. I. 476; Hf. Ind. Fl. I. 437.

HAB. Not unfrequent on poor and rocky soil in shrubberies and in the dry and open, especially the Eng, forests all over Burma from Chittagong and Ava down to Tenasserim. Fl. Apr. May.

### Averrhoa, L.

#### Conspectus of species.

Fruits sharply angled; seed arillate, ... *A. Carambola*.  
 Fruits bluntish angular; seeds without arillus, ... *A. Bilimbi*.

\*1. *A. CARAMBOLA*, L. sp. pl. 613; Roxb. Fl. Ind. II. 450; Griff. Not. Dicot. 455. t. 540. f. 4; Bedd. Fl. Sylv. Madr. t. 39; Hf. Ind. Fl. I. 439.

HAB. Much cultivated in gardens all over the country. Fl. H. S. and R. S.; Fr. C. S.

\*2. *A. BILIMBI*, L. sp. pl. 613; Roxb. Fl. Ind. II. 451; Bedd. Fl. Sylv. t. 117; Hf. Ind. Fl. I. 439.



HAB. Rarely cultivated in Pegu and Tenasserim. Fl. H. S.; Fr. R. S.

The differences between *A. Carambola* and *A. Bilimbi* appear to me to be of generic value.

### Impatiens, L.

#### *Conspectus of species.*

\* Leaves all opposite or occasionally ternately-whorled.

Leaves almost sessile; flowers rather large, wings obtuse, the spur long and slender,  
 inflexed, ... .. *J. Chinensis.*  
 Exactly as the preceding, but the spur short and inflexed, ... *J. reticulata.*  
 Leaves on long petioles; flowers rather small, the wings acuminate, the spur short,  
 incurved, ... .. *J. circaoides.*

\* \* Leaves all alternate.

O Flowers shortly racemose, umbellate or corymbose at the ends of the long peduncles.

Leaves petioled; flowers small with a long straight or curved spur, *J. Tacoyana.*

O O Peduncles 1- or rarely 2- or 3-flowered, shorter than the leaves.

X Spur usually much shorter than the corolla.

† Flowers 1-2 in. long.

Stem succulent, the thickness of a goose-quill; leaves narrow, pubescent or glabrescent shortly petioled. (Spur often very long and slender), ... *J. Balsamina.*

Stem the thickness of the finger, short; leaves elliptic or ovate, glabrous, long-petioled, ... *J. Parishii.*

† † Flowers small.

Glabrous, slender; leaves long-petioled, narrow, ... *J. capillipes.*

X X Spur longer than the corolla.

Very slender, glabrous; capsule puberulous; flowers rather large, ... *J. violæflora.*

1. *J. CHINENSIS*, L. sp. pl. 1328; Hf. and Th. in Linn. Proc. IV. 119; Hf. Ind. Fl. I. 444. (*J. fasciculata*, Lamk. Enc. Méth. I. 359; Wight Ic. t. 748; Hook. Bot. Mag. t. 4631; *J. heterophylla*, Wall. in Roxb. Fl. Ind. ed. Car. II. 458; *I. setacea*, Coleb. in Hook. Exot. Fl. t. 137).

HAB. Birma (Wall.) Tenasserim (Helf.)

2. *J. RETICULATA*, Wall. Pl. As. rar. I. 19. t. 19; Hf. Ind. Fl. I. 448.

HAB. Common in the open especially the low forests and in cultivated lands all over Burma from Ava and Martaban down to Tenasserim. Fl. Nov. Decb.

Hardly more than a form of the preceding. *J. tomentosa*, Heyne, is stated by Hf. and Thoms. in Linn. Proc. to grow in Pegu, but the habitat is omitted in Hf. Fl. Ind. It seems to be the above species, at any rate the Wallichian specimens cited belong here.

3. *J. circaoides*, Wall. sp. Hf. and Th. in Linn. Proc. IV. 130; Hf. Ind. Fl. I. 453.





HAB. Rare in shady places in the moister upper mixed forests of the southern parts of the Pegu Yomah; Tenasserim, Tavoy (Wall.) Fl. Jan.

4. *J. TAVOYANA*, Bth. ap. Hf. and Th. in Linn. Proc. IV. 146.

HAB. Tenasserim, Moulmein District (Zwakabin; Thoungyeen, etc.,) down to Tavoy. Fl. Octob.

\*5. *J. BALSAMINA*, L. sp. pl. 1328; Roxb. Fl. Ind. I. 651; Hf. and Th. in Linn. Proc. IV. 131; Hf. Ind. Fl. I. 453. (*J. Malayensis*, Griff Not. Dicot. 457. t. 576. f. 2?).

Var.  $\alpha$ . *VULGARIS*, Hf. and Th. l. c.

Var.  $\beta$ . *COCCINEA*, Hf. and Th. l. c. (*J. coccinea*, Sims. Bot. Mag. t. 1256).

HAB. Much cultivated by all natives and often as wild in toungyas and in rubbishy places around villages. Fl. H. S.

6. *J. PARISHII*, Hf. Ind. Fl. I. 456.

HAB. Tenasserim, on limestone rocks near Moulmein (Parish).

7. *J. CAPILLIPES*, Hf. and Th. in Linn. Proc. IV. 135; Hf. Ind. Fl. I. 456.

HAB. Tenasserim, Moulmein District on limestone rocks.

8. *J. VIOLEFLORA*, Hf. Ind. Fl. I. 457.

HAB. Tenasserim, Moulmein (Lobb.)

#### Hydrocera, Bl.

1. *H. TRIFLORA*, WA. Prod. I. 140; Miq. Fl. Ind. Bat. I/2. 132. (*Impatiens natans*, Willd. sp. pl. I. 1175; Roxb. Fl. Ind. I. 652).

HAB. Not unfrequent along borders of ditches, watercourses and rice-fields of the Pegu plains. Fl. R. S.



ON THE ASIATIC SPECIES OF MOLOSSI.  
By G. E. DOBSON, B. A., M. B., F. L. S.

(Read May 7th, 1873.)

The *Molossi* are found in all the warmer regions of the earth, but apparently exist in greatest abundance in the tropical and sub-tropical parts of America. They have been divided into several genera of which two only have hitherto been discovered in Asia; of these *Nyctinomus* is alone represented in the Peninsula of India; the other genus *Chiromeles*, containing a single species *C. torquatus*, inhabits the Malay Peninsula, Java, Sumatra, Borneo, and probably other islands of the Malay Archipelago.

Although *Nyctinomus* has a distribution equalled only by *Vespertilio*, extending through the warmer parts of the five great continents, a single species only, *Nyctinomus plicatus*, has been known to exist in the Indian Peninsula.

Another species of *Nyctinomus* has been reported from China by Mr. Swinhoe, most probably *N. Cestonii*, Savi, also from Southern Europe.

The total number of Asiatic species of *Molossi* known previous to 1873 was therefore three, and to these I added in January 1873 a new and most remarkable species, *N. Johorensis*, which Mr. Wood-Mason's private collector\* obtained at Johore in the Malay Peninsula, and in this paper I shall describe another new species from India (preserved in the collection in the Indian Museum) which had been confounded with *N. plicatus*.

Genus NYCTINOMUS, Geoff. *Ears connivent*.

Dentition:—in.  $\frac{2}{4}$ ; c.  $\frac{1-1}{1-1}$ ; p. m.  $\frac{2-2}{2-2}$ , m.  $\frac{3-3}{3-3}$ .

a. *Ears close together in front, their inner margins having a common point of origin on the forehead; tragus expanded and rounded off above.* (Subgenus, *Dinops*).

NYCTINOMUS CESTONII.

*Dinops Cestonii*, Savi, Bull. de Sc. Nat., VIII, p. 286.

*Dysopes Cestonii*, Wagner, Suppl. Sœugeth., V, p. 702.

*Nyctinomus insignis*, Blyth, Cat. Mamm. Mus. Asiat. Soc. Beng.

? *Dysopes (Molossus) Rüppellii*, Swinhoe, Proc. Zool. Soc. Lond., 1870, p. 619.

A specimen in the Indian Museum labelled by Blyth "*Nyctinomus insignis*, Blyth" sent by Mr. Swinhoe from Amoy, undoubtedly belongs to this species. It is an adult male agreeing in every respect with specimens from Southern Europe, having also the peculiar throat pore concealed by the long hair of the neck. I have no doubt that the specimen obtained also at

\* I have since ascertained that the specimen alluded to by the author was captured by my valued correspondent Mr. James Meldrum of Johore. J. W.-M. [Editor].





Amoy by Mr. Swinhoe and referred to by him under the name of *Dysopes Rüppelii* belongs to this species also.

This adds another species to the large number of *Chiroptera* known to be common to Europe and Asia.

NYCTINOMUS TRAGATUS, n. sp.

The shape of the tragus is similar to that of *N. Cestonii*, and has the same relative size; ears like those of *N. plicatus* but not connected by a band in front; wing-membrane from the ankles; calcaneum distinct, terminating in a lobe; free portion of the tail shorter than in *N. plicatus*.

This species, though so very well distinguished from *N. plicatus* by the above-mentioned characters, resembles that species very closely in general aspect, and the measurements of the different parts correspond so closely that on a superficial examination it may be confounded with it.

I found, in a bottle in the Indian Museum which had been labelled *N. plicatus* by Blyth, two specimens, of which one only was referable to that species, the other presented the characters enumerated above and so has formed the type for my new species. The Indian Museum has since received other specimens of *N. tragatus* from Rajanpur on the north-western frontier of India, and from Jashpur near Chutia Nagpur.

*b. Ears conjoined at the base of their inner margins; tragus very small, quadrate.* (Subgenus, *Dysopes*).

NYCTINOMUS PLICATUS.

*Vespertilio plicatus*, Buchanan, Trans. Linn. Soc., 1800, Vol. V, p. 261.

*Nyctinomus Bengalensis*, Geoff., Desc. de l'Egypte, II, p. 130.

*Nyctinomus tenuis*, Horsf., Zool. Researches in Java.

*Mops Indicus*, F. Cuvier, Dents des Mammif., p. 49.

*Dysopes plicatus*, Temm., Monog. de Mammal., Vol. 1, p. 223.

I have examined Buchanan's type of this species from General Hardwicke's collection in the British Museum, also specimens of *N. tenuis*, Horsfd. from Java. The only perceptible difference consists in the attachment of the wing-membrane. In *N. plicatus* although a strong raphé passes from the ankle along the tibia to the margin of the wing-membrane yet the latter can only be said to commence from a point nearly midway between the ankle and the knee joints, while in *N. tenuis* the wing has its origin from the ankle joint or very close to it. It would be necessary before separating the Indian and Javanese forms into distinct species to examine a large series of specimens as it is probable that intermediate examples exist.

To this section, distinguished by the very small tragus, and by the connection of the ears in front by a low band, belongs also *N. Ægyptiacus* from Africa.



*c. Ears connected in front by a deep band produced upwards, and posteriorly by a second band enclosing a hollow naked space between, on the crown of the head; tragus small quadrate. (Subgenus, Chærephon\*).*

#### NYCTINOMUS JOHORENSIS.

*Nyctinomus Johorensis*, Dobson, Proc. As. Soc. Beng., January 1873.

I have nothing to add to my description of this very interesting species. The type specimen preserved in the Indian Museum, an adult male, is the only representative of the species. It would be very desirable to obtain other specimens, especially females, as the peculiar cavity on the head between the ears may be a secondary sexual character analogous to the frontal sac of some species of *Phyllorhina*.

Genus CHIROMELES, Horsf. *Ears separate, distinct.*

Dentition:—in.  $\frac{2}{2}$ ; c.  $\frac{1-1}{1-1}$ ; p. m.  $\frac{1-1}{2-2}$ ; m.  $\frac{3-3}{3-3}$ .

#### CHIROMELES TORQUATUS.

*Chiromeles torquatus*, Horsfd., Zool. Researches in Java.


*Chiromeles torquatus et caudatus*, Temm., Monog. de Mammal., I, p. 218 and II, p. 348.

The upper incisors are stout and placed close together; the upper premolar is large and tricuspidate; the 1st lower premolar is minute and wedged in the space between the canine and second premolar, which are close together; the last upper molar is less than half the size of the second molar.

\* Χαιρεφών, Aristophanes, *Aves*, 1296, 1564.



# INDEX.

 Names of new genera and species have an asterisk (\*) prefixed.

- 
- |   |                                |
|---|--------------------------------|
| Ablabes flaviceps, 112, 114               | Aquila crassipes, 146          |
| "    "    var. 123                        | "    hastata, 147              |
| "    melanocephalus, 123                  | "    imperialis, 146           |
| Acanthoderus bicoronatus, 45              | "    Mogilnik, 146             |
| "    lacertinus, 45                       | "    naevia, 145, 146, 147     |
| "    semiarmatus, 45                      | "    orientalis, 145, 146, 147 |
| Acanthus, 98                              | Ardisia floribunda, 87         |
| Aceraius, 156                             | *    "    Helferiana, 86       |
| "    emarginatus, 158                     | "    neriifolia, 87            |
| "    grandis, 158                         | *    "    rigida, 87           |
| Acranthera, 77                            | *    "    serrulata, 87        |
| Acrocarpus intricatus, 192                | Argostema, 79                  |
| Actephila, 236                            | *ARILLARIA, 70                 |
| *    "    puberula, 236                   | "    robusta, 71               |
| Adeniophis (Callophis) bivirgatus, 115    | Arthrostylidium, 252           |
| "    "    intestinalis, 115               | *Arundinaria elegans, 249      |
| Adenosacme, 78                            | "    racemosa, 250             |
| Aello, 194                                | Astacoides, 41                 |
| *Afzelia retusa, 73                       | Asystasia, 99                  |
| Agapetes setigera, 84                     | Atalantia longispina, 228      |
| "    variegata, 84                        | Bacillus, 46                   |
| "    verticillata, 83                     | "    Artemis, 46, 51           |
| *Albizia (Pithecolobium) glomeriflora, 74 | "    aspericollis, 46          |
| Allæomorphia, 80                          | "    carinulatus, 46, 55       |
| Amphicarpea ferruginea, 232               | *    "    fuscolineatus, 46    |
| Anabæna bullosa, 180                      | "    Gerhardii, 46             |
| "    flos-aquæ, 180                       | "    gramineus, 46             |
| *    "    Indica, 180                     | "    Geisovii, 46              |
| "    stagnalis, 180                       | "    Guenzii, 46               |
| "    subtilissima, 180                    | *    "    hispidulus, 47       |
| Andrographis, 100                         | "    humilis, 55               |
| *Anisoptera glabra, 61                    | *    "    lævigatus, 49        |
| "    marginata, 61                        | "    leprosus, 46              |
| Aulacocyclus Parryi, 150                  | *    "    oxytenes, 48         |
| "    teres, 152                           | "    patellifer, 46, 51        |
| *Anneslea monticola, 59                   | "    Regulus, 49               |
| *Antidesma fruticulosum, 237              | *    "    scabriusculus, 55    |
| "    lunatum, 239                         | "    scytale, 46, 55           |
| "    molle, 237                           | *    "    Westwoodii, 50       |
| "    Roxburghii, 237                      | "    (Baculum) Artemis, 51     |
| "    velutinosum, 237                     | "    "    cuniculus, 54        |
| *Aphanocapsa albida, 176                  | *    "    "    furcillatus, 54 |
| Aporosa lunata, 239                       | "    "    Hyphærean, 54        |
| "    Roxburghiana, 239                    | *    "    "    insignis, 51    |
| *    "    villosula, 239                  | *    "    "    Penthesilea, 52 |
| Aquila Adalberti, 146                     | "    "    ramosus, 46          |
| "    bifasciata, 145, 146, 147            | "    "    scytale, 55          |
| "    clangæ, 145, 146                     | "    "    Humberti, 46         |





- Baculum, 54  
 \*BALANOSTREBLUS, 247  
 \*Balanostreblus ilicifolius, 248  
 Bambusa, 251  
     " Helferi, 253  
     " Maclellandii, 253  
     " polymorpha, 251  
     " striata, 251.  
 \* " (Dendrocalamus) calostachya, 250  
     " " critica, 250  
     " " latiflora, 250  
     " " longispatha, 250  
 Barleria, 98  
     " stenophylla, 95  
 Barringtonia angusta, 233, 234  
     " pterocarpa, 234  
 Basilianus, 156, 158  
     " Andamanensis, 159  
     " caneris, 157, 159, 162  
     " Cantoris, 159, 160, 161  
     " inaequalis, 159  
     " Indicus, 159  
     " Nilgheriensis, 159  
     " Sikkimensis, 159  
 Batrachospermum moniliforme, 192  
 Bauhinia brachycarpa, 73  
     " involucrata, 72  
     " monandra, 73  
     " ornata, 72  
     " rosea, 72  
     " tomentosa, 73  
     " VahlII, 72  
 Begonia, 82  
     " barbata, 82  
     " Brandisiana, 83  
     " flaccidissima, 83  
     " laciniata, 82  
     " Martabanica, 82  
     " megaptera, 82  
     " modestiflora, 83  
     " nivea, 81, 82  
     " paleacea, 83  
     " parvuliflora, 83  
     " proceridifolia, 82  
     " prolifera, 83  
     " Roxburghii, 82  
     " scutata, 83  
     " sinuata, 83  
     " subperfoliata, 83  
     " superfoliata, 81  
     " sureuligera, 83  
     " velutina, 81, 83  
     " verticillata, 82  
 Beilschmiedia, 103  
 Berrya mollis, 62  
 Blepharis, 98  
 \*BLUMEODENDRON, 245  
 \*Blumeodendron Muellieri, 245  
     " Tokbrai, 245  
 Bombax insignis, 61  
     " Malabarica, 61  
 Bostrychia intricata, 193  
     " rivularis, 193  
 Bouea Brandisiana, 66  
     " Burmanica, 66  
 Brandisia discolor, 236  
 Briedelia, 241  
     " amena, 241  
     " dasycalyx, 241  
     " " var. acuminate, 241  
     " " var. aridicola, 241  
     " " var. genuina, 241  
     " pubescens, 241  
     " stipularis, 242  
 Bronchocela cristatella, 113  
 Brownlowia lanceolata, 62  
 \*Brucea mollis, 64  
 Bufo asper, 113  
     " melanostictus, 112, 163  
 Bulbochaete, 189  
     " intermedia, 189  
     " Peguana, 189  
 Bulimus atricallosus, 27  
     " interruptus, var. citrinus, 27  
     " Nicobaricus, 163  
 Bungarus fasciatus, 115  
 Caedodiscus, 244  
     " hirsutulus, 243  
 Calamaria Linnæi, 120  
     " Stahlknechti, 114, 119  
 Calocaris MacAndrewæ, 40  
 Callula pulchra, 114  
 Cambarus pellucidus, 40  
 Canscora Helferiana, 236  
     " Parishii, 236  
 Canthium, 76  
 \*Capparis crassifolia, 227  
     " horrida, 227  
     " polymorpha, 227  
 Cardianthera, 101  
 Cardisoma, 258, 259, 261  
 Carpophaga bicolor, 163  
 Carpopogon bracteatus, 231  
 Cassia renigera, 71  
 Casparea, 82  
 Catenella opuntia, 192  
 Cephaelis, 75  
 Cephalanthus, 79  
 Cephalostachyum, 252  
     " " flavescens, 252  
     " " pergracile, 252  
 \*Ceracupes Austeni, 151  
     " fronticornis, 151  
 Ceratostema miniatum, 85  
 Cerberus variegatum, 84  
     " rhynchops, 115, 162  
 Certhia discolor, 255  
     " familiaris, 255, 257  
     " Himalayana, 255  
     " Hodgsoni, 255, 257  
     " Mandelii, 256, 257  
     " Nipalensis, 255, 256  
     " Stollezkae, 256, 257



- Cetejus, 156  
 \* " Australiensis, 157  
 Chetophora pisiformis, 191  
 " radians, 191  
 " stricta, 191  
 " tuberculosa, 191  
 \*Chantransia roscola, 192  
 Chara gymnopitys, 193  
 Chasalia, 75  
 Chickrassia velutina, 65  
 \*Chloranthus insignis, 108  
 \*CHONDRORHIZES, 144  
 \*Chroococcus granulatus, 176  
 " indicus, 176  
 " minor, 175  
 \*Chroolepus botryoides, 190  
 " calamicola, 190  
 " elongatum, 189, 190  
 " flavum, 189  
 " fusco-atrum, 190  
 " Kurzii, 190  
 " lageniferum, 190  
 " tenue, 191  
 " umbrinum, 190  
 Chrysopela ornata, 114  
 " rubescens, 114  
 \*Chthonoblastus Burmanicus, 178  
 " Kurzii, 178  
 " Lyngbyei, 178  
 Cicca, 238  
 " emblica, 239  
 " (Emblica) albizzioides, 239  
 " " macrocarpa, 239  
 Citrus angulatus, 228  
 \*Cladophora (Agagropila) contorta, 188  
 " callicoma, 187  
 " codioides, 188  
 " exigua, 188  
 " fracta, var. strepens, 187  
 " glomerata, 187  
 " Javanica, 187  
 " minutissima, 188  
 " strepens, 187  
 " Tranquebariensis, 188  
 \*Claoxylon leucocarpum, 244  
 " longifolium, 244  
 " longipetiolatum, 244  
 Clausilia Gouldiana, 28  
 " insignis, 28  
 " Javana, 29  
 " (Phaedusa) filicostata, 28  
 " " Penangensis, 27  
 " " Philippiana, 28  
 " Sumatrana, 28  
 Cleistanthus, 242  
 " stenophyllus, 242  
 Cleidion nitidum, 245  
 Closterium striolatum, 184  
 Coccoceras, 240  
 " plicatum, 239  
 \*Codium Andamanicum, 246  
 " umbellatum, 246  
 \*Codium ? lutescens, 246  
 Coffea, 76  
 Columbia floribunda, 63  
 Comacupes basalis, 151  
 " caviornis, 152  
 " cylindraceus, 151  
 " Felderi, 152  
 " Masoni, 151  
 Comptosoma (Elaphis) melanurum, 114  
 " radiatum, 114  
 \*Conferva Burmanica, 187  
 " Funkii, 187  
 " inaequalis, 178, 190  
 " rhyphophila, 187  
 " subetacea, 187  
 " utriculosa, 187  
 Conulema, 16  
 Cordyline Helferiana, 248  
 Crocodilus Pondicherianus, 113, 114  
 " porosus, 113  
 Crossandra, 98  
 Crotalaria Kurzii, 229  
 " " var. genuina, 229  
 " " var. luxurians, 229  
 Croton argyratus, 242  
 " bicolor, 242  
 " calococcus, 242  
 " caudatus, 243  
 " crozophoroides, 243  
 " flocculosus, 242  
 " robustus, 242  
 " sublyratus, 243  
 " Tiglii, 242, 243  
 Cyclophus tricolor, 114, 122  
 Cyclophorus Nicobaricus, 163  
 Cyclostemon eglandulosum, 240  
 " sessile, 240  
 Cylicodaphne Wightiana, 102  
 Cylindrophis rufus, 114  
 Cylindrospermum humicola, 181  
 " macrosporum, 181  
 Cynonycteris, 200, 202  
 " amplexicaudata, 200, 202, 203  
 " minor, 203  
 Cynopterus, 200  
 " affinis, 200  
 " brachysoma, 202, 203  
 " marginatus, 200, 201, 203  
 " " var. Andaman  
 " ensis, 201, 203  
 " " P. Sherzeri,  
 " 201  
 " Sherzeri, 201, 203  
 Cyrtodactylus, 118  
 " affinis, 113  
 " rubidus, 163  
 Cystacanthus, 100  
 Dacalacanthus, 99  
 Dalbergia cana, 70  
 " glomeriflora, 70  
 \*Daphnidium argenteum, 103  
 \*Decaschistia crassiuscula, 227





- Decaschistia crotonifolia*, 227  
*Dendrophis caudolineatus*, 114, 123, 124  
     162  
     " *octolineatus*, 124  
     " *pictus*, 114, 162, 163  
     " *terrificus*, 162  
*Dentella*, 79  
*Desmodium angulatum*, 231  
     " *auricomum*, 230  
     " *obcordatum*, 229  
     " *oblatum*, 230  
     " *reniforme*, 230  
     " *strangulatum*, 230  
     " *triflorum*, 230  
*Dibamus*, 169  
     " *Nicobaricus*, 168  
*Dicliptera*, 100  
     " *speciosa*, 97  
     " " *var. genuina*, 97  
     " " *pilosa*, 97  
*Didymus*, 154  
*Dimetia*, 80  
*Dinochloa Andamanica*, 253  
     " *ciliata*, 253  
     " *Maclellandii*, 253  
     " *Tjangkorreh*, 253  
*Diospyros mollis*, 88  
     " *sapotoides*, 88  
     " *undulata*, 88  
*Diplopelma Berdmorei*, 114  
     " *Carnaticum*, 114  
*Diplospora*, 77  
*Diplostromium tenuissimum*, 187  
*Dipsas cynodon*, 114  
     " *dendrophila*, 114  
     " *Drapiezii*, 114  
*Docidium baculum*, 184  
     " *Ehrenberghii*, 184  
*Dorstenia Griffithiana*, 104  
*Dracena angustifolia*, 249  
     " *brachyphylla*, 249  
     " *Finlaysoni*, 249  
     " *Helferiana*, 248  
     " *linearifolia*, 249  
     " *pachyphylla*, 249  
     " *spicata*, 249  
     " *ternifolia*, 248  
*Draco abbreviatus*, 119  
     " *fimbriatus*, 113, 119  
     " *quinquefasciatus*, 112, 113, 118  
     " *volans*, 113  
*Drilosiphon Julianus*, 181  
*Dysodidendron*, 76  
*Ebermaiera*, 101  
*Ecbolium*, 99  
*Elatostema bulbiferum*, 104  
     " *cornutum*, 104  
     " *gibbosum*, 104  
     " *lineolatum*, 104  
     " *membranifolium*, 104  
*Eleutherura marginata*, 200  
*Emblia*, 238  
*Ennea bicolor*, 11, 33  
*Engaus*, 43  
*Enteromorpha complanata*, 186  
     " *compressa*, *var. complanata*  
         186  
*EONYCTERIS*, 204  
*Eonycteris spelaea*, 204  
*Epierium glutinosum*, 113  
*Episphenus Moorei*, 156  
*Eranthemum*, 99  
*Eriocnemis monticulosus*, 155  
     " *tridens*, 155  
*Erythrina lithosperma*, 69, 70  
     " *holosericea*, 69  
     " *Sumatrana*, 184  
*Euastrum ampullaceum*, 184  
     " *ansatum*, 184  
*Eucicea*, 238  
*Eugenia cerasiflora*, 233  
     " *grandis*, 233  
     " *lanceifolia*, 233  
     " *pachyphylla*, 232  
     " *tristis*, 233  
*Euphorbia epiphyllodes*, 247  
     " *lingularia*, 247  
     " *notoptera*, 247  
     " *scabrifolia*, 247  
*Euprepes carinatus*, 163, 113  
     " *macrostis*, 163  
     " *olivaceus*, 113, 118  
     " *rufescens*, 113  
*Eurostus alternans*, 125  
*Eutrigonostemon*, 236  
*Evodia viticina*, 64  
*Excacaria holophylla*, 247  
     " *oppositifolia*, 247  
*Ferania Sieboldi*, 125  
*Ficus affinis*, 105  
     " *anastomozeus*, 107  
     " *caloneura*, 106  
     " *chrysocarpa*, 107  
     " *diversifolia*, 107  
     " *geniculata*, 105  
     " *insignis*, 105  
     " *infectoria*, 105  
     " *ischnopoda*, 107  
     " *lepidosa*, 107  
     " *pomifera*, 106  
     " *pomifera*, *var. oviformis*, 106  
     " " *pomiformis*, 106  
     " *pyrrhocarpa*, 106  
     " *rhododendrifolia*, 105  
     " *Rumphii*, 106  
     " *tuberculata*, 106  
*Fordonia unicolor*, 115  
*Galium*, 75  
*Gardenia*, 77  
*Gecarcinucus*, 258, 259  
*Gecarcinus*, 258, 259  
     " *ruricola*, 259, 260  
*Gecarcoidea*, 258  
*Gecko guttatus*, 113



- Gecko stentor*, 113  
*Gelidium intricatus*, 192  
*\*Gentiana crassa*, 235  
   " *nudicaulis*, 235  
   " " *var. compacta*, 235  
   " " *genuina*, 235  
*Geophila*, 75  
*Gigantochloa aspera*, 251  
   " (*Oxytenanthera*) *macro-*  
     *tachya*, 251  
*Glochidion*, 237  
   " *Andamanicum*, 238  
   " *Bancanum*, 238  
   " *dasystylum*, 237  
   " *leiostylum*, 237  
   " *Zelanicum*, 238  
*\*Gleiotrichia Kurziana*, 181  
*Glossospermum 5-alatum*, 63  
*Gonates*, 156  
   " *Doleschali*, 158  
   " *Gemarii*, 158  
   " *naviculator*, 157  
*\*Gongroceras radicans*, 192  
*\*Gongrosira onusta*, 191  
   " *pygmaea*, 191  
*\*GONOCITRUS*, 228  
*Gonocitrus angulatus*, 228  
*Gonyosoma oxycephalum*, 114, 123  
*Graptophyllum*, 100  
*Greenia*, 79  
*Grewia columnaris*, 63  
   " *floribunda*, 63  
   " *humilis*, 63  
   " *microstemma*, 63  
   " *odorata*, 63  
   " *pilosa*, 63  
   " *retusifolia*, 63  
   " *scabrida*, 63  
   " *umbellata*, 63  
*Griffithia*, 77  
*\*Grona filicaulis*, 232  
   " *Grahamii*, 232  
*Guettarda*, 77  
*\*Gunisanthus mollis*, 88  
*Gymnodaetylus*, 118  
   " (*Cyrtodaetylus*) *pulchellus*, 113  
   " *pulchellus*, 118  
   " *Wicksii*, 165  
*Gymnops*, 144  
   " *meizolepis*, 144  
   " *microlepis*, 144  
*Gynochthodes*, 76  
*Gynoon hirsutum*, 237  
*Hapaline*, 109  
   " *Benthamiana*, 109  
*Haplacanthus*, 101  
*Hedyotis*, 80  
*\*Helicaria permolle*, 18  
*\*Helicia pyrrobobotrya*, 103  
*Helicina Dunkeri*, 163  
*Helicteres lanceolata*, 62  
*Helicteres obtusa*, 62  
   " *virgata*, 62  
*Helix capitum*, 20  
   " *Canthoriana*, 22  
   " *Castra*, 20, 21  
   " *cymatium*, 11, 13  
   " *planorbis*, 20  
   " *tricarinata*, 16  
   " *trochiformis*, 20  
   " (*Fruticicola*) *bolus*, 26  
   " " *hemiopta*, 26  
   " " *propinqua*, 26  
   " " *scalpturrita*, 26  
   " " *similaris*, 26  
   " " *Zoroaster*, 26  
*Hemidaphnis*, 101  
*Hemicyclia Andamanica*, 240  
*Hemidactylus (Doryara) Berdmorei*, 114  
   " *frænatus*, 113, 165  
*Hemigraphis*, 99  
   " *glandulosa*, 92  
*\*HEMIOCHIS*, 108  
*\*Hemiorchis Burmanica*, 108  
*Heritiera attenuata*, 62  
   " *macrophylla*, 61  
*\*Heterophragma sulfurea*, 90  
*\*Hildenbrandtia Arracana*, 192  
*Hinulia maculata*, 114, 163  
*Hipistes hydrinus*, 116  
*\*Hiptage arborea*, 228  
*Homalopsis bucata*, 115  
   " *decussata*, 125  
*Hopea diversifolia*, 61  
   " *eglandulosa*, 240  
   " *floribunda*, 60  
   " *gratissima*, 61  
   " *Griffithii*, 60  
   " *jucunda*, 61  
*Hormosiphon ellipsosporum*, 179  
   " *granulare*, 179  
*Hydnophytum*, 75  
*\*Hydrobryum lichenoides*, 103  
*Hydrocoleum Meneghinianum*, 178  
   " *striatum*, 178  
*Hydrophis robustus*, 115  
*Hydrophyllax*, 80  
*Hydrosaurus salvator*, 113, 163  
*Hylarana erythraea*, 112, 114  
   " *Tytleri*, 114  
*\*HYLBOCARCINUS*, 259  
*\*Hylboarcinus Humei*, 260  
*Hymenocardia*, 240  
   " *plicata*, 239  
*Hymenodyction*, 79  
*Hymenopogon*, 79  
*Hypheothrix aeruginea*, 176  
   " *aeruginea*, *var. subtorulosa*,  
     176  
   " *calcicola*, *var. muralis*, 176  
   " *subtilissima*, 177  
   " *viridula*, 177  
*Hypobathrum*, 77



- Hypoglossum Bengalense*, 193  
     *Leprieurii*, 193  
*Hypsirhina* (*Ferania*) *alternans*, 151, 125  
     *Bocourti*, 125  
     *enhydria*, 115  
*Hyptianthera*, 77  
*Incillaria*, 29  
     *bilineata*, 30  
*Indigofera caloneura*, 229  
*Isomandra calophylla*, 88  
*Ixora*, 76  
*Julocroton*, 243  
*Justicia*, 100  
     *Atkinsoniana*, 96  
     *caloneura*, 96  
     *dasycarpa*, 96  
     *flava*, 97  
*Kaliella Barrackporensis*, 20  
*Kirganelia*, 238  
*Knoxia*, 80  
*Laches*, 156  
     *Comptonii*, 158  
     *gracilis*, 156  
*Lagerstræmia flos-reginae*, 234  
     *macrocarpa*, 234  
     *villosa*, 234  
*Lasianthus*, 76  
*Lebidieropsis*, 241  
*Leea compactiflora*, 65  
     *cordata*, 66  
     *gigantea*, 65  
     *laeta*, 65  
     *sambucina*, 65  
     *sanguinea*, 66  
*Lepidagathis*, 99  
     *strobilina*, 96  
*Leptaulax*, 154  
     *bicolor*, 154, 155  
     *dentatus*, 155, 157  
     *Nietneri*, 155  
     *paxilus*, 155  
     *planus*, 155  
     *Timorensis*, 155  
*Leptothrix ochracea*, 176  
*Lespedeza decora*, 231  
     *elliptica*, 231  
     *hirta*, 231  
     *parviflora*, 231  
     *pinetorum*, 230  
*Limax carolinensis*, 30  
*Limonia alternifolia*, 64  
*Litsea leiophylla*, 103  
*Lonchodes*, 45  
     *pseudoporus*, 55  
*Lophophanes Humei*, 57  
*Lycodon aulicus*, 114, 115, 162  
*Lyngbya pallida*, 178  
*Lysimachia Griffithiana*, 86  
     *linearifolia*, 86  
     *lobelioides*, 86  
     *peduncularis*, 86  
*Macaranga denticulata*, 246  
     *gummiflua*, 246  
     *involverata*, 246  
     *membranacea*, 246  
     *molliscula*, 245  
*Machilus fruticosa*, 101  
*Macrochlamys* (*Durgella*) *honesta*, 24  
     *hyalina*, 17  
     *hypoleuca*, 17  
     *Indicus*, 17  
     *patane*, 17  
     *petasus*, 17  
     *stephoides*, 17  
     *stephus*, 17  
*Macroglossus*, 204  
     *minimus*, 204, 205  
     *speliens*, 204  
*Macrolinus latipennis*, 155  
     *Waterhousei*, 156  
     *Weberi*, 155  
*Mæsa mollissima*, 87, 88  
     *mucosa*, 87  
     *permollis*, 88  
*Mallotus*, 244, 245  
     *albus*, 245  
     *dispar*, 244  
     *eriocarpoides*, 244  
     *eriocarpus*, 244  
     *lappaceus*, 244  
     *longipes*, 244  
     *paniculatus*, 245  
     *Tokbrai*, 245  
     *Wallichianus*, 240  
*Magnifera caloneura*, 66  
     *Indica*, 66  
*Mastachilus politus*, 156, 161  
     *polyphyllus*, 156  
*Mastigothrix æruginea*, 181  
*MAYODENDRON*, 91  
*Meghimation*, 29  
*Meghimatium striatum*, 30  
*Melocanna*, 252  
     *humilis*, 251  
*Mesocarpus intricatus*, 186  
     *scalaris*, 186  
*Metabolos*, 80  
*Microtropis longifolia*, 65  
*Microcystis palmicola*, 18  
*Millettia Brandisiana*, 69  
     *extensa*, 67  
     *glaucescens*, 67  
     *leiogyna*, 67  
     *leucantha*, 68  
     *monticola*, 67  
     *ovalifolia*, 68  
     *pachycarpa*, 67  
     *pubinervis*, 68  
     *pulehra*, 69  
     *tetraptera*, 69  
*Mococa macrotympanum*, 166  
*Monocondylæa Avie*, 209  
     *Cumingi*, 209  
     *inoscularis*, 209





- Morinda*, 78  
*Mucuna bracteata*, 231  
     " *pruriens*, 232  
*Mundulea pulchra*, 63  
*Murina cyclotis*, 206  
*Musa rubra*, 248  
*Mussaenda*, 77  
*Mysis*, 42  
*Nauclea*, 78  
*Nanopetalum*, 242  
*Nelsonia*, 101  
*Nephrops norvegicus*, 39, 41, 43  
*\*Nephropsis*, 40  
*\*Nephropsis Stewarti*, 40  
*Neuracanthus*, 90  
     " *grandiflorus*, 95  
     " *subuninervis*, 95  
*Nigritella*, 20  
*\*Nitella microglochin*, 193  
     " *oligospira*, 193  
     " *Roxburghii*, 193  
*Nomaphila*, 101  
*Nostoc ellipsosporum*, 179  
     " *granulare*, 179  
     " *heterothrix*, 179  
     " *Kurzianum*, 179  
     " *limosum*, 180  
     " *purpurascens*, 179  
     " *rufescens*, 179  
     " *rivulare*, 179  
     " *saxatile*, 180  
*Nycteridium platyurus*, 113  
*Nymphon*, 174  
     " *grossipes*, 173  
*Oedogonium apophysatum*, 188  
     " *Braunii*, 188  
     " *gracile*, 188  
     " *Kurzii*, 189  
     " *Landsboroughii*, 188  
     " *Rothii*, 188  
     " *scutatum*, 189  
     " *tenellum*, 189  
     " *vesicatum*, 189  
*Oldenlandia*, 80  
*Onchidium molle*, 33  
*Ophiops*, 144  
     " (*Gymnops*) *microlepis*, 144  
*Ophites albobfuscus*, 112, 115, 124  
     " *subcinctus*, 112, 115, 124  
*Ophiorrhiza*, 79  
*Ormosia coarctata*, 71  
     " *floribunda*, 71  
*Oscillaria Antillarum*, 177  
     " *antliaria*, var. *physodes*, 177  
     " *brevis*, 177  
     " *chalybea*, 177  
     " " var. *Indica*, 177  
     " *fenestralis*, 177  
     " *Grateloupii*, 177  
     " *Neapolitana*, 177  
     " *sancta*, 177  
     " *violacea*, 177  
*\*Oscillaria viridula*, 177  
*Oxycalamus longiceps*, 112, 114, 120  
*Oxytenanthera*, 251  
     " *Thwaitesii*, 251  
*Pachysoma Sherzeri*, 201  
*Paederia*, 80  
     " *calycina*, 74  
*Paracroton pendulus*, 245  
*Paranephrops*, 43  
*\*Parkia insignis*, 74  
     " *leiophylla*, 73  
*Parmacella reticulata*, 31  
*Parmarion reticulatus*, 31  
*Parus Britannicus*, 57  
     " *amodius*, 57  
*Passalus Nicobaricus*, 158  
     " *pilifer*, 158  
*Pellionia*, 104  
*Pelocarcinus*, 258, 259  
     " *Lalandei*, 259, 260, 261  
*Peripia mutilata*, 113  
*Peristrophe*, 100  
*Petunga*, 77  
*Phalangium caudatum*, 140, 141  
*Phayloopsis*, 99  
*Phelsuma Andamanense*, 163  
*Philomycus*, 29  
     " *bilineatus*, 31  
     " *Carolinensis*, 30  
     " *dorsalis*, 30  
     " *pictus*, 30  
     " *reticulatus*, 31  
     " *striatus*, 31  
*Phlogacanthus*, 100  
*Phormidium arenarium*, 177  
     " *inundatum*, 177  
     " *thinoderma*, 177  
*\*Phycoseris Burmanica*, 186  
*Phyllanthus Andamanicus*, 238  
*\*PHYLLOCYCLUS*, 235  
     " *Helferiana*, 236  
     " *Parishii*, 236  
*Plectopylis repercuta*, 170  
     " *Shanensis*, 170  
*\*Pleurarius brachyphyllus*, 152, 156  
     " *pilipes*, 153  
*Pleurococcus vulgaris*, 184  
*Pleurotenium baculum*, 184  
     " *trabecula*, 184  
*Podophis chalcides*, 112, 113  
*\*Podosira Kurzii*, 175  
*Polypedates maculatus*, 112, 114  
     " *quadrilineatus*, 112, 114  
*Polyphragmon*, 77  
*\*Polypothrix binata*, 184  
*Polysiphonia subadunca*, var. *major*, 193  
*Pongamia ovalifolia*, 68  
*Prismatomeris*, 76  
*Pristidia*, 77  
*Procris gibbosa*, 104  
*Protococcus crustaceus*, 190  
     " *minor*, 175



- Protococcus vulgaris*.  
*Psammodynaastes pictus*, 115  
     "    *pulverulentus*, 115  
 \* *Pseudostachyum compactiflorum*, 252  
     "    *Helferi*, 253  
*Psichohormium inaequalis*, 187  
*Psilobium*, 78  
*Psychotria*, 75  
*Pterolobium lacerans*, 71  
     "    *macropterum*, 71  
     "    *microphyllum*, 71  
*Pteropus*, 196, 200  
     "    *amplexicaudatus*, 202  
     "    *Assamensis*, 196  
     "    *edulis*, 197, 198  
     "    *Edwardsii*, 196  
     "    *Leschenaultii*, 202  
     "    *leucocephalus*, 196  
     "    *marginatus*, 200  
     "    *medius*, 193, 196, 198, 199  
     "    *melanotus*, 198  
     "    *minimus*, 205  
     "    *Nicobaricus*, 198, 199  
     "    *pyrivorus*, 200  
     "    *rostratus*, 205  
     "    *seminudus*, 202  
*Pterospermum aceroides*, 62  
*Ptyas hexagonotus*, 114  
     "    *korros*, 114  
*Ptychozoon homalocephalum*, 113  
 \* *Pueraria brachycarpa*, 254  
     "    *ferruginea*, 232  
     "    *hirsuta*, 254  
     "    *stricta*, 254  
*Pupa avanica*, 33  
     "    *filosa*, 33  
     "    *lignicola*, 32  
     "    (*Pupisoma*) *orcella*, 33  
     "    (*Scopelophila*) *Kokeilli*, 32  
     "    "    *palmira*, 32  
 \* *PUPISOMA*, 32  
 \* *Pyrenaria diospyricarpa*, 60  
*Pyrus granulosa*, 232  
     "    *Karensium*, 232  
*Python reticulatus*, 115  
 \* *Quercus Brandisiana*, 108  
     "    *eumorpha*, 107  
*Rana fusca*, 112, 115  
     "    *gracilis*, 112  
     "    *lymnocharis*, 116  
     "    "    *var. pulla*, 112, 116  
     "    *plicatella*, 112, 116  
     "    *porosissima*, 117  
     "    *tygrina*, *var. pantherina*, 112  
*Ramulus*, 55  
*Randia*, 77  
*Rhinacanthus*, 100  
*Rhinophidion Nicobaricum*, 168  
 \* *Rhizoclonium arboreum*, 187  
     "    *Hookeri*, 187  
 \* *RHOPALORHYNCHUS*, 172  
 \* *Rhopalorhynchus Kröyeri*, 171  
 \* *Rhynchosnema Kurzii*, 185  
*Rhysota Chevalieri*, 12  
     "    *cymatium*, 11  
     "    *densa*, 12  
     "    *semiglobosa*, 12  
*Riopa albopunctata*, 114  
 \* *Rivularia Peguana*, 181  
*Rotula anceps*, 14, 15, 20  
     "    *bijuga*, 14  
     "    *Indica*, 14  
     "    *serrula*, 20  
     "    *Shiplayi*, 14  
*Rubia*, 75  
*Ruellia*, 99  
     "    *flaccida*, 91  
     "    *macrosiphon*, 92  
     "    *suffruticosa*, 92  
*Saprosona*, 76  
*Sarcocephalus*, 78  
 \* *Saurauja armata*, 59  
     "    *macrotricha*, 60  
 \* *Schizogonium tenuissimum*, 189  
*Schizosiphon parietinus*, 181  
*Schizostachyum*, 252  
     "    *Blumei*, 252  
     "    *Hindustanicum*, 252  
*Scyphostachys*, 77  
*Scleromitron*, 80  
*Scyphiphora*, 76  
*Seytonema aureum*, 181  
     "    *cinereum*, 181  
     "    "    *var. Julianum*, 181  
     "    *fulvum*, 182  
     "    *fuscum*, 182  
     "    *gracile*, 182  
     "    *Kurzianum*, 182  
     "    *murale*, 182, 183  
     "    *olivaceum*, 183  
     "    *parvulum*, 183  
     "    *Peguanum*, 182  
     "    *subclavatum*, 183  
     "    *tomentosum*, 182  
     "    *varium*, 182  
     "    *Vieillardii*, 182  
     "    *violascens*, 183  
     "    (*Symphyosiphon*) *Rhizophoræ*, 183  
*Securinega*, 238  
 \* *Semicyclus Redtenbacheri*, 153  
*Serissa*, 76  
*Sesara infrendens*, 24  
*Shorea floribunda*, 60  
     "    *Penangiana*, 61  
*Simotes ancoralis*, 122  
     "    *bicatentatus*, 114, 120, 121  
     "    *brevicauda*, 122  
     "    *catenifer*, 114, 121, 122  
     "    *Cochinchinensis*, 122  
     "    *cruentatus*, 121, 114  
*Sirella*, 20  
*Sirocoleum Gujanense*, 179  
     "    *Indicum*, 178



- \**Sirosiphon parasiticus*, 184  
*Sitala ategia*, 13  
 " *cacuminifera*, 20  
 " *carinifera*, 16  
 " *infusa*, 13, 15, 20  
 " *tricarinata*, 16  
*Swietenia villosa*, 65  
 " *velutina*, 65  
*Solenocyclus exaratus*, 156  
*Sonneratia apetala*, 175  
*Sophora robusta*, 71  
\**Sphaerium Avatum*, 209  
*Sphaerococcus intricatus*, 192  
*Spathodea ignea*, 91  
 " *stipulata*, 91  
 " *velutina*, 90  
*Spatholobus crassifolius*, 254  
*Spermacoce*, 80  
*Spiradiella*, 79  
*Spirogyna adnata*, 185  
 " *crassa*, 185  
 " *decimina*, 185  
 " *irregularis*, 185  
 " *jugalis*, 185  
 " *longata*, 185  
 " *majuscula*, 185  
 " *nitida*, 185  
 " *quinina*, 185  
 " *tropica*, 185  
\**Staurospermum fragile*, 186  
*Stravadium augustum*, 233  
\**Stemona Griffithiana*, 109  
*Stenogyra gracilis*, 11, 27, 33  
*Stephegyne*, 78  
*Sterculia ornata*, 228  
 " *villosa*, 228  
*Stereospermum chelonoides*, 91  
 " *neuranthum*, 61  
*Stigeoclonium tenue*, var. *gracile*, 191  
 " *Rangoenicum*, 191  
*Strobilanthes*, 99  
 " *acrocephalus*, 94  
 " *Barhaavioides*, 95  
 " *dasyperma*, 94  
 " *fimbriata*, 93  
 " *foetidissima*, 93  
 " *glomerata*, 94  
 " *imbricata*, 94  
 " *Karensium*, 94  
 " *Neesii*, 93  
 " *pentstemonoides*, 95  
 " *pterocaulis*, 93  
 " *rufescens*, 93  
 " *sublaecida*, 94  
 " *(Hemigraphis) Burmanica*, 92  
 " *Griffithiana*, 93  
 " *Pavala*, 22  
 " *Kurziana*, 179  
 " *lutescens*, 179  
*Symplocos cratægoides*, 89  
 " *lelostachya*, 89  
\**Symplocos leucantha*, 89  
 " *lucida*, 89  
 " *pedicellata*, 89  
\**Synechococcus fuscus*, 176  
\**Tabernaemontana membranifolia*, 90  
 " *ophiorrhizoides*, 89  
 " *rostrata*, 90  
 " *subcapitata*, 90  
*Tachydromus seolineatus*, 114  
*Taniocerus bicanthatus*, 152  
 " *pygmaeus*, 152  
*Tebenophorus*, 29  
 " *Carolinensis*, 29  
*Teinostachyum*, 252  
*Terminalia Chebula*, 81  
 " *tomentella*, 80  
*Tetranthera Panamoja*, 103  
 " *(Cyllocodaphne) albicans*, 102  
 " *calophylla*, 102  
 " *nuculana*, 102  
*Thelyphonus Antillanus*, 128, 142  
 " *Assamensis*, 128, 130, 133  
 " *angustus*, 134  
 " *Beddomei*, 129, 130, 142  
 " *Brasilianus*, 128  
 " *caudatus*, 128, 129, 133, 134, 138, 140, 141  
 " *formosus*, 129, 130, 137  
 " *Indicus*, 129, 130, 138  
 " *Linganus*, 128  
 " *proscorpio*, 128, 129, 133, 141, 142  
 " *rufimanus*, 128, 133, 134  
 " *rufipes*, 128, 129  
 " *scabrinus*, 127, 128, 129, 130, 141  
 " *(conf.) angustus*, 127, 130, 134  
*Thibaudia macrantha*, 84  
 " *obliqua*, 84  
 " *variegata*, 84  
*Thunbergia*, 98  
*Tiaris dilophus*, 168  
 " *Humei*, 167  
 " *subcristata*, 163, 167  
 " *tuberculatus*, 168  
*Trachia breviseta*, 25  
 " *crassicastrata*, 171  
 " *delibrata*, 26  
 " *erinaeca*, 25  
 " *eustoma*, 25  
 " *fallaciosa*, 171  
 " *Footei*, 170  
 " *Helferi*, 25  
 " *Nilghirica*, 171  
 " *Penangensis*, 24, 26  
 " *quieta*, 25  
 " *ruginosa*, 171  
\**Tragia Burmanica*, 244  
*Tragops prasinus*, 114  
*Trigonostemon*, 236



- Trimeresurus* Cantoria, 162  
     " erythrus, 115  
     " porphyraceus, 163  
     " Wagleri, 115, 126  
*Trochomorpha*, 20  
     " Cantoriana, 22  
     " castra, 21, 22  
     " planorbis, 20, 22  
     " Ternatana, 20  
     " Timorensis, 22  
*Tropidonotus* quincunciatus, 114, 162  
     " trianguligerus, 114  
     " vittatus, 114  
*Typhlops* braminus, 114  
     " nigroalbus, 114  
*Typhloscincus* Martensii, 169  
     " Nicobaricus, 168, 169  
*Uca*, 258, 259  
*Ulothrix* subtilis, 189  
*Uncaria*, 79  
*\*Unio* Blamoensis, 207  
     " Burmanus, 207  
     " corrugatus, 208  
     " crispisulcatus, 20  
     " Feddeni, 208  
     " Gowhattensis, 208  
     " Mandalayensis, 208  
     " securis, 208  
     " Wyngungensis, 208  
*Ururia* obcordata, 229  
*Urophyllum*, 78  
*\*Vaccinium* campanulatum, 85  
     " exaristatum, 86  
     " " var. pubescens, 86  
     " " semipubescens, 86  
     " macrostemon, 85  
     " miniatum, 85  
*\*Vaccinium* pumilum, 85  
     " setigerum, 84  
     " variegatum, 84  
     " " var. macranthum, 84  
     " " parviflora, 84  
     " verticillatum, 83, 84  
     " " var. elegans, 84  
     " " grandiflorum, 84  
     " " geminum, 84  
*Vaginulus* Birmanicus, 33  
     " Hasselti, 33  
     " Luzonicus, 34, 35  
     " porulosus, 36  
     " solea, 34  
     " Taunaysii, 35, 36  
     " Tourannensis, 34  
*Vaucheria* sessilis, var. cespitosa, 186  
     " var. repens, 186  
*Vangueria*, 76  
*Vellejus* Moluccanus, 155  
*Veronicella* Birmanica, 34  
*Vespertilio* murinus, 205  
     " murinoides, 205  
*Videna*, 20  
*\*Vitex* canescens, 101  
     " Negundo, 101  
*Vitis* Linnei, 66  
     " Wallichii, 66  
*\*Vitrina* nucleata, 23  
*Webera*, 77  
*Wendlandia*, 79  
*Xenopeltis* unicolor, 115  
*Zetes*, 173  
     " hispidus, 174  
*\*Zygnema* amplum, 186  
     " stellinum, 186  
     " Vaucherii, 186



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DESCRIPTIONS OF NINE SPECIES OF ALYCEINÆ FROM ASSAM AND THE NAGA HILLS.—*By Major H. H. GODWIN-AUSTEN, F. R. G. S., F. Z. S., &c., Deputy Superintendent Topographical Survey of India.*

(With Plate III).

(Read August 6th, 1874).

Another season of research in the N. E. frontier has added largely to its terrestrial molluscan fauna, and I was particularly fortunate among the smaller forms of the Cyclostomacea. The *Alycæi* particularly seem to be inexhaustible; the different species are very local but very persistent in character over comparatively small areas, and as they are generally abundant where they occur, the idea that they are accidental varieties is not supported. Very few have a wide vertical distribution and several common forms of the Khási Hills, at a distance of 120 miles east, in the Naga country, are absent or become very rare indeed. The whole section is a most interesting one and illustrates admirably the many changes that nature will ring on any particular form of life, when confined to particular habitats suited for their development and again subjected to all the slow alternations in climate, soil, &c. that time produces.

I give at the end of the paper a few additional notes as to the range of some species of the group previously described and again met with. Several species of *Alycæi* when taken in a fresh state are found covered with a coating of earthy matter rendering them very indistinct and difficult to find, especially as they are to be generally found below the surface and under the dead leaves and decaying bark and sticks that cover the ground so thickly in old



forest. Dead shells may be sometimes seen in hundreds in the clearings after the cut jungle has been fired, when all the surface vegetable mould is burnt and the ground deeply heated; in this way many local forms of landshells are destroyed off large areas as the country becomes cleared, and many of the more local species no doubt have thus died out.

*ALYCEUS INFLATUS*, n. sp., Plate III, Fig. 1.

Shell depressedly turbinate, solid, pale ochreous horny, moderately umbilicated, smooth, finely sculptured on the swollen portion of the last whorl adjacent to the sutural tube. Spire conoid, apex blunt; suture impressed. Whorls  $4\frac{1}{2}$ , the last very much swollen for the size of the shell. Constriction smooth, very short. Sutural tube moderate. Aperture oblique, circular; peristome double, solid, united, and reflected. Operculum concave, black, its position far forward at the very edge of the aperture.

Dimensions, major diam. 0.28"—0.16," minor diam. 0.19"—0.13," alt. 0.15"—0.11," diam. ap. 0.07."

*Habitat*.—I first noticed this shell in the collection of Mr. F. Stoliczka, who kindly allowed me to take it for figuring; it had been found in Assam, but its exact locality was unknown. In the winter of 1872-73 I was fortunate to find it myself in the Naga Hills under Japvo Peak and again at Yémi, Phónggum, and Gaziphimi at the head of the Lanier River on the main water-shed.

This shell in many respects assimilates to *A. conicus*, mihi, but is more openly umbilicated; in another direction it has the character of the sub-genus *Dioryx* viz. in form of mouth, the short constriction, and position of operculum close to the edge of the aperture.

*ALYCEUS STRIGATUS*, n. sp., Plate III, Fig. 2.

Shell pale corneous or amber, finely and evenly costulated throughout. Spire depressed, apex blunt and darker coloured. Suture moderate. Whorls  $3\frac{1}{2}$ , the last very little swollen, slightly constricted, with a single low ridge close behind the aperture, the constriction smooth and very finely striated. Sutural tube very short. Aperture slightly oblique, circular; peristome single, simple, continuous, moderately thickened. Operculum.....?

*Habitat*.—Assam in collection Ferd. Stoliczka.

Major diam. 0.15," minor diam. 0.11," alt. 0.08," diam. ap. 0.05,".

This is another species of the short-sutural-tubed section of *Alyceus*, of which *A. Khasiacus* (vide Pl. III, Fig. 4, J. A. S. Bengal, Vol. XL, Pt. II, 1871) is a good type. The general and distinct costulation from constriction to apex, particularly the form of constriction and mouth, mark it as a good species. It is more openly umbilicated than *A. Khasiacus*.



I have an *Alyceus* from Darjeeling, found by Mr. F. Stoliczka, but as I possess but a single much worn specimen, I hesitate to describe it more fully: it is very similar to *A. Theobaldi*, Bs. from the Khási Hills, but is smaller with a more expanded aperture; peristome less thickened, and the sculpture appears to have been very fine; I name it *A. lenticulus*, and trust some day to get other specimens. Dimensions, major diam. 0.14," minor diam. 0.11," alt. 0.08".

*ALYCEUS STOLICZKII*, n. sp., Pl. III. Fig. 3.

Shell globosely turbinate, thick, pale horny, finely and closely ribbed from the swell of the first whorl as far back as the end of the sutural tube, thence to the apex distantly and finely costulated; narrowly umbilicated, spire conoid; apex blunt; suture well impressed. Whorls  $4\frac{1}{2}$ , rounded, the last swollen, then sharply constricted close to the origin of the sutural tube, again swelling and expanding to the mouth. Constriction smooth with a few distant lines of costulation. The sutural tube peculiarly long. Aperture oblique, circular; peristome double, outer lip small, the inner much produced and expanded into 2 broad shallow channels on the inside of the outer margin separated by a V-shaped thickening of the same (see Fig. 3<sup>b</sup>). Operculum black, concave, of the usual multi-spiral form.

Major diam. 0.31"—0.28," minor diam. 0.24"—0.20," alt. 0.17"—0.15," diam. ap. 0.12," sutural tube 0.15."

*Habitat*.—Two specimens were obtained for me by Mr. Belletty on Angaoluo Peak, Nágá Hills at 7,000 feet, during field season of 1872-73. I found it again further to the east at Kezakenomih, and at the head of the Lanier River at about 5,000 feet where the specimens were much larger. It comes near to the forms of *A. Ingrami*, W. Blf. var. (Pl. IV and V, J. A. S. Bengal, Vol. XL, Pt. II, 1871) from the same range of mountains, but its tumid shape, and particularly the very produced aperture, render it a very distinct and well marked species. I have named it after that very accomplished conchologist F. Stoliczka\* of the Geological Survey of India.

*ALYCEUS GLOBULUS*, n. sp., Pl. III. Fig. 4.

Shell moderately umbilicated, globosely turbinate, white, finely costulated on the swell of the first whorl, becoming gradually smooth thence to the apex. Spire conoid, apex flat and rounded. Whorls  $4\frac{1}{2}$ , flat, the last mo-

\* Since this paper was written, the sad news has reached us that this highly gifted naturalist—to whom all readers of this Journal and I personally owe so deep a debt of gratitude, and who to many of us was a dear and cherished friend—had succumbed to the exposure when in Yarkund and on his return journey to Leh. It may be truly said of Stoliczka that he gave his life to the very last, and died nobly in the pursuit of Science.



derately swollen, then sharply constricted and again enlarged by a ridge, from which emanate four minor longitudinal ridges on the expanded portion of the peristome. Constriction narrow, close to sutural tube, this is moderate in length and about equal to the distance of its base to lip. Aperture much expanded, oblique, round, angulate above, waved on outer margin and channelled within; the outer lip of peristome thin, slightly recurved on the inner lower margin. Operculum black, multi-spiral, concave.

Major diam. 0.20," minor diam. 0.16," alt. 0.13,"

*Habitat*.—Phunggum, a Naga village at head of the Lanier valley, at 5,000 feet, where it is abundant.

It is near the *crispatus* form described in my last paper. Its larger globose form, long sutural tube, and more open umbilicus, mark it as distinct.

**ALYCÆUS BICRENATUS, n. sp., Pl. III, Fig. 5.**

Shell moderately umbilicated, sub-turbinate, pale corneous or nearly white, fine close ribbing on swell of last whorl, extending to behind the termination of the sutural tube and thence to apex very finely and evenly costulated. Spire depressedly conoid, suture impressed, apex blunt. Whorls 4, the last moderately swollen, constriction rather wide, followed by a single well defined high ridge close behind the expanded portion of the aperture where it is defined by a sharp narrow costulate rib. The expanded portion anterior to this is longitudinally waved on surface, produced by two deep triangular grooves situated well within the aperture and on outer margin. Sutural tube short. Aperture oblique; peristome round, slightly angular above. Operculum, pale horny, concave.

Major diam. 0.14," minor diam. 0.10," alt. 0.09," sutural tube 0.42."

*Habitat*.—Kopamedza Peak Naga Hill, 8—9,000 feet, in forest.

This shell belongs to the same group as the last and is very close to *A. crenatus*, mihi (vide plate III, fig. 5, J. A. S. B., Pt. II, 1871), but the longer sutural tube and the strongly crenated peristome of *crenatus* mark the distinction.

**ALYCÆUS SERRATUS, n. sp., Pl. III, Fig. 6.**

Shell very closely umbilicated, turbinate, rather thin, pale corneous or dark brown, finely costulated on tumid portion of last whorl, rest of shell smooth with shining surface, suture moderately impressed. Spire conoid, apex pointed. Whorls 4, rounded, the last very slightly tumid, constricted and enlarged into a low recurved ridge. Sutural tube moderate. Aperture sub-vertical, circular, very finely notched on lower and outer margin; peristome double, thick, the outer reflected on the inner margin. Operculum thin, pale horny, flat in front.





Major diam. 0.10," minor diam. 0.09," alt. 0.09," sutural tube 0.75."

*Habitat*.—Laisen Trigl. station, Munipur Hills; rare, some eight specimens only having been found.

In the thickened rounded form of the peristome this species assimilates to *A. conicus*, but the minute notches on the inner margin are peculiar and unlike what is seen in any form I am acquainted with. It seems intermediate between the above and *A. diagonalis*.

**ALYCEUS MULTIRUGOSUS, n. sp., Pl. III, Fig. 7.**

Shell depressedly sub-turbinate, rather openly umbilicated, translucent, pale corneous, smooth glistening surface, very minute ribbing near sutural tube. Spire flatly conoid; whorls 4, flat, the last very little swollen, constricted and enlarged again towards the aperture into a zigzag-shaped ridge or what might be described as three parallel and connected ridges. Sutural tube short. Aperture oblique, circular; peristome double, both continuous and the outer slightly reflected. Operculum.....?

Major diam. 0.12," minor diam. 0.08," alt. 0.08," sutural tube 0.037."

*Habitat*.—Hills at head of the Lanier River, Naga Hills, about 5—6,000 feet, rare.

A close ally of *A. Khasiacus*, mihi, but a much smaller shell; the many ridged area near constriction, however, is a wide departure from that form. A large var. of *A. Khasiacus* occurred at Gaziphima and, as an instance of local variability in this genus, a few of the specimens have a slight tendency to a fimbriated peristome as in *A. crenatus*, mihi.

**ALYCEUS (DIORYX) GRAPHICUS, W. Blf., var. MINOR, Pl. III, Fig. 8.**

This shell is much smaller than *graphicus* from the Khasi Hills, &c., and is longer in spire with close costulation throughout.

The differences though persistent in Naga Hill specimens are not sufficient to make the form distinct.

Major diam. 0.10," alt. 0.12."

**ALYCEUS BURTII, n. sp., Plate III, Fig. 9.**

Shell turbinate, openly umbilicated, thick, pale ochreous; shallow but well marked ribbing on swell of last whorl and finely costulated on the apex. Spire conoid, apex sharp, suture well impressed. Whorls 5, the last moderately swollen, constriction very slight, short, and smooth up to the peristome, sutural tube moderate, rather large at base. Aperture oblique, laterally oval, angular on inner upper margin, with 4 well marked notches on the outer margin; peristome thickened, double, well reflected, inner lip continuous.

Major diam. 0.22," minor diam. 0.19," alt. 0.15."



*Habitat.*—Foot of the Bhutan Himalaya at the debouchement of the Barowli River, Assam; collected by Mr. J. Burt, to whom my thanks are due for this and some other interesting shells.

It is close to *A. polygonoma*, but the form of constriction is slightly different, the peristome is well crenulated, and the sculpture stronger. At Kamakia hill near Gowhatty, I obtained specimens of an *Alycæus* still nearer in form to *polygonoma*, only that the sutural tube is but about half the length, ending abruptly, while in *polygonoma* it is long and thread-like. I shall describe it in my next paper.

*A. crenatus* was found as far east as Shiroifurar, also at Kezakenomih and Yémai.

*A. Ingrami*, var. is the commonest form in the Naga Hills and has a great range in altitude, being found at Dimapur in the Dunsiri valley under 300 feet and as high as 7,000 feet at Khúnho Peak on the Burrail range, also at Laisen Hill and Sikhāmi, and on the east side of the Manipur valley on the slopes of Nongmaiching and Múngching.

*A. Nagaensis* I have from Kezakenomih, Kopamedza, Prowi, Laisen, and Nongmaiching.

*A. Khasiacus* occurred as far east as Kopamedza Peak, where it was associated with the nearly allied form above described, *A. multirugosus*.

*A. urnula*, Bens. is a very abundant shell all along the Burrail range, it retains the type form more persistently than any species of the genus known to me. Very fine large specimens were collected at Kezakenomih, Naga Hills; dimensions, alt. 0.20," diam. 0.20".

*A. diagonius* and *A. crispatus*, I found again in the Dunsiri valley, Dimapur, and lower spurs of the eastern Burrail.

*A. prosectus*, Bens., so common in the Khasi Hills, is very rare in the eastern Naga Hills and I procured 2 or 3 specimens only; these shew a transition, for they are not quite identical with the type form from Teria Ghat.

### *Explanation of Plate III.*

- |                         |   |
|-------------------------|---|
| Fig. 1, 1a, 1b, 1c, 1d, | <i>Alycæus inflatus.</i>                                  |
| Fig. 2, 2a, 2b,         | " <i>strigatus.</i>                                       |
| Fig. 3, 3a, 3b,         | " <i>Stoliczkii.</i>                                      |
| Fig. 4, 4a, 4b,         | " <i>globulus.</i>  |
| Fig. 5, 5a, 5b,         | " <i>bicrenatus.</i>                                      |
| Fig. 6, 6a, 6b,         | " <i>serratus.</i>  |
| Fig. 7, 7a,             | " <i>multirugosus.</i>                                    |
| Fig. 8, 8a,             | " ( <i>Dioryx</i> ) <i>graphicus</i> , var. <i>minor.</i> |
| Fig. 9, 9a,             | " <i>Burtii.</i>  |



FOURTH LIST OF BIRDS PRINCIPALLY FROM THE NAGA HILLS AND MUNIPUR,  
INCLUDING OTHERS FROM THE KHASI, GARO, AND TIPPERAH HILLS.—  
*By Major H. H. GODWIN-AUSTEN, F. R. G. S., F. Z. S., &c., Deputy  
Superintendent, Topographical Survey of India.*

(With Plates IV—X).

(Read May 6th, 1874).

In adverting to the hope expressed in my former papers, that the lists of birds from the N. E. frontier might be added to by members of the Survey Party; I have to thank several members of it for the aid they afforded, and especially are my thanks due to Mr. Wm. Robert, who was working during the field season of 1872-73 in the Garo Hills.

I must remind all connected with these survey operations that as they penetrate to the eastward, no finer field for ornithological research can be now found in India, as is shewn by the many beautiful new forms, that I was fortunate enough to obtain during my visit to the Naga Hills and Munipur in the winter of 1872-73. Ten of these have been described by me in the P. Z. S., one in the 'Annals and Magazine of Natural History,' and Mr. Gould has described one in the 'Birds of Asia.' I have introduced these descriptions again to render the paper of more use to ornithologists in India, into whose hands it is likely to fall.

This fourth list contains 112 species, which with 380 before recorded brings the number collected up to 492.

I have adhered to my former resolve not to bring into the list any bird which has not been actually bagged, the record of species seen on the wing, especially of the smaller duller birds, not being of any real value. Thus some very common forms are still absent. A few corrections have to be made in my former lists and some further detail is necessary regarding two or three birds that were brought into List No. 3, which was prepared somewhat hastily. I supply figures of seven of the new species, which will go some way, I trust, towards counterbalancing the imperfections which the paper may contain.

In the determination of the species, I have received very cordial assistance from Lord Walden, whose fine collection from British India and Malayana aided most materially. In expressing thanks for assistance afforded, I must also include the name of Mr. R. B. Sharpe, in charge of the ornithological branch at the British Museum, who was always ready to place his time and the collection at my disposal.



20.\* *HIERAX EUTOLMOS*, Hodg.

Garo Hills. Appears never to be a common bird anywhere. I received two skins from the above hills, where it was obtained by Mr. Wm. Robert. I never saw it on the east of the Khasi Hills, where it appears to be replaced by *H. melanoleucos*, Blyth. Their habits are Shrike-like; they sit on isolated dead trees in the forest clearings and sally off from time to time to seize some insect.

37. *LIMNAETUS KIENIERII*, De Sparre.

This rare and handsome Hawk Eagle was obtained for me by Mr. W. Robert of the Topographical Survey in the Naga Hills during the cold season.

Length of wing 15.75," tail 10," tarsus 3.95," bill from gape 1.5." There is a fine specimen set up in the British Museum. Rare everywhere it appears to have a great range.

56a. *MILVUS MELANOTIS*, Tem. and Schl.

I obtained this species in February in the Manipur valley; but it was not numerous.

80. *GLAUCIDIUM BRODLEI*, Burton.

Naga Hills. This bird is not common in these hills; its monotonous call at night is not so often heard as about Mussoorie in the N. W. Provinces.

82a. *HIRUNDO CAHIRICA*, Sav. = *HIRUNDO TYTLERI*, Jerdon.

My specimens from Manipur are evidently identical with Jerdon's bird observed at Dacca in June, it was the only form in Manipur in February and March, and very numerous at Imphal the capital; it was then commencing to breed. Darjeeling specimens in the collection of Lord Walden are still more like *Cahirica* from Egypt.

†W. 4.6," T. 3.4," t. 0.4," Bf. 0.3."

*Hirundo gutturalis*, Scop. is the form I obtained in the Naga Hills at about 5000 feet in January and February, and recorded from the Khasi Hills as *H. rustica* in my first list. Specimen from Naga Hills measures, W. 4.5," T. 4.3," t. 0.45," Bf. 0.3." At Shillong I did not notice them in any number until about July.

\* The numbers refer to those in "Jerdon's Birds of India."

† Throughout this paper L. stands for Length, W. Wing, T. tail, t. tarsus, Bf. bill at front, Bg. bill at gape.



100a. *CYPSELUS SUBFURCATUS*, Blyth.

This is, I think, the first record of the occurrence of this species within the Indian area. I observed a few pairs in June breeding in the cliffs that overhang the falls of the "Umkrau" at Shillong. They were not easy to obtain, and the first I shot fell into grass so far down that it was never found; however, a day or two after I secured one, and after this they soon left the place. I could not get at the nests. My specimen agrees with those from Amoy and Malacca in Lord Walden's collection.

Wing, 5.1," t. 0.5," bf. 0.23." It will probably be found in all similar deep valleys with precipitous sides that occur in the Khási hills.

108a. *CAPRIMULGUS JOTAKA*, ♀, Schlegel.

I shot this bird near the Umshirpi falls on the 29th May. It got up off the path and immediately settled again about 10 yards off on the open path, on again putting it up it did the same. Captain Badgley, who was walking behind me, called out that he had found the eggs. I then put the bird up a third time and brought her down. The eggs were laid close in under the rock on side of the path lying on the bare ground with no signs of any thing in the way of preparation for them or the young. The two eggs are of a dull white, blotched with three shades of umber and one shade of ashy brown: in the one they are distributed pretty evenly throughout and this is symmetrical in form, the minor axis being in the centre of the length: in the other the markings are mostly confined to the larger end and the shape is rounder:

1st.	major axis	1.22,	minor axis	0.88."
2nd.	"	1.19,"	"	0.91."

Another ♀ was obtained by me near the village of Sopvomah in the Naga Hills, in January, at an elevation of 5000 feet, which, Lord Walden tells me, is identical with Japanese and Burmese individuals.

*Caprimulgus* is a common bird at Shillong during May and part of June, after which I did not hear their chukking noise so often, and at the time I started for Calcutta in August, they had apparently left the vicinity of the station owing probably to the increased rain-fall.

114. *CAPRIMULGUS MONTICOLUS*, Franklin.

From the Garo Hills.

W. 7.55," T. 4.85," t. 0.83."

122. *NYCTIORNIS ATHERTONI*, Jard. and Selby.

Garo and Naga Hills.



## 126. EURYSTOMUS ORIENTALIS, Lin.

This beautiful Roller is essentially a forest bird and was seen on several occasions on the Dunsiri. They frequented the trees that surround the large tanks at Dimapur, and I shot my specimens there.

## 140. HOMRAIUS BICORNIS, Lin.

Several fine specimens were brought in by Captain Badgley and Mr. Chennell from the Tipperah Hills. In the Naga Hills I observed four large Hornbills, which I believe were this species, near Tellizo Peak, in January,—the only Hornbills seen in that part of the hills, no fruit then being ripe. In the low Dunsiri forest, at that season of the year, Hornbills are very numerous.

The Tipperah birds were very fine, their dimensions greatly exceeding those given in Jerdon's 'Birds of India;' the largest measured as follows:

Wing 21·5," tail 19·0," tarsus, 3·0"

Length of bill along commissure to gape, ..... 12·0"

Bill in a straight line from point to gape, ..... 10·75"

Length of bill over culmen to posterior of casque, .. ..... 16·5"

Depth of bill at centre of casque (highest part), ..... 4·5"

Length of casque, ..... 7·0"

Breadth of casque at base, ..... 3·68"

Orange pink above, pinkish yellow on side of upper mandible and very red at the point; the lower is wax-yellow.

## 156. PICUS CATHPHARIUS, Hodgson.

One specimen was got in the Naga Hills in the rather open country near Sikhami.

♂ Description. Upper parts pure black. Primary coverts tipped white secondary wholly white, forming a very large wing patch. The white spots on both webs of the alars are arranged thus:

Primaries.	1st	2nd	3rd	4th	5th	6th	all the rest.
Inner web.	2	3	3	4	4	4	4
Outer web.	1	5	6	6	6	5	4
<div style="display: flex; align-items: center; justify-content: center;"> <span style="font-size: 2em; margin-right: 5px;">{</span> <span style="margin-right: 5px;">}</span> </div> tipped white							

Tail coloured diagonally buff on 3 outer tail feathers, which have a subterminal black spot, and the two outer either with a narrow black bar or two spots. Both above and below the eye pure white, buffish on the ear-coverts and frontal band; white at base of lower mandible, becoming buff on lower throat, and pale ochre on breast and abdomen, much streaked with





black particularly so on former. A black band from base of lower mandible, down side of neck, fading into the streaks of the upper breast. Occiput and side of neck crimson extending round behind ear-coverts and crossing the black line from the gape forming a gorget in front. Under tail-coverts pale crimson.

It is called "Khupi woi ru" by the Anghámi Nágás.

161. *HYPOPICUS HYPERYTHRUS*, Vigors.

Naga Hills.

Wing black, the primary coverts tipped white and the primaries spotted on outer-web. Tail black, two outer feathers barred black at tip, the antepenultimate tipped brown and with a single white spot. Bill pale yellow beneath.

168. *MULLERIPICUS PULVERULENTUS*, Temm.

Mr. Wm.-Robert sent me this large form from the Garo Hills. Bill greenish grey, lower mandible pale at tip.

176. *VENILIA PYRRHOTIS*, Hodgs.

Naga Hills.

177. *GECCINULUS GRANTIA*, McClelland.

♂ and ♀ from Garo Hills.

The female wants the dull crimson on fore part of head and there is less yellow in the dull green of head and neck, the former in front is dull ochraceous.

201. *CUCULUS POLIOCEPHALUS*, Latham.

This bird was very abundant at Shillong in the early summer months, and I obtained it in every phase of coloration from the intense rufous to the pure ashy. The peculiar loud call is heard all over the Pine forests and I observed that sometimes the bird when perching sat along the branch, after the manner of *Caprimulgus*.

205. *HIEROCOCCYX VARIUS*, Vahl.

Garo Hills.

211a. *CHRYSOCOCCYX XANTHORHYNCHOS*, Horsfd.

This lovely bird from Hill Tipperah was obtained there by Mr. Ross Mangles, by whom it was given to me.

212. *COCCYSTES MELANOLEUCOS*, Gmel.

Was rather a common bird at Shillong in June. I have often witnessed the noisy way in which the males chase the female and Blyth's description is very true; a female measured—





L. 12.6," W. 5.9," T. 7.25," t. 1.15," Bf. 0.8;" irides very dark brown, legs pale plumbeous. The contents of the stomach of this bird were 3 of the large hairy caterpillars (3½ inches long) so common on the grass-lands in the Khasi Hills. This female had at least 10 eggs in ovary, which presented no very great difference of gradation in size. The caeca were 0.95" in length, intestine 11.5."

213. *COCCYSTES COROMANDUS*, Lin.

I have received this bird from the Garo Hills and from Hill Tipperah.

227. *ÆTHOPYGA GOULDIE*, Vigors.

♂ obtained at Mezimih, Naga Hills, at head of the Lanier River, at 6000 feet. L. 5.8," W. 2.08," T. 3.18, t. 0.55," Bf. 0.58." It has a steel blue spot below the ear-coverts not noticed by Jerdon. The crimson extends over the eye as a supercilium and the lores are black.

228. *ÆTHOPYGA IGNICAUDA*, Hodg.

This was rather a common bird in the Naga Hills at 5000 feet in January; generally seen in vicinity of the villages, in its winter dress. In my specimen the breast is not dashed with red at all, being quite plain orange yellow towards abdomen, and the female has no red about her at all. My female specimen has a slight trace of red just appearing on the feathers of the nape and back of neck. I fancy they ascend to breed about 9000 feet. *Saturata* was common at that altitude in April.

237. *DICÆUM CHRYSORHÆUM*, Temm.

On the Samaguting ridge, *Nectarinidæ* were very common in the winter months, and I obtained this comparatively rare bird near the station in December. The irides are bright red, legs black.

L. 3.9," W. 2.3," T. 1.4," t. 0.52," Bf. 0.4."

233a. *LEPTOCOMA HASSELTII*, Temminck.

From Hill Tipperah; added to my collection by Mr. Ross Mangles, B. C. S.

242. *PACHYGLOSSA MELANOXANTHA*, Hodgson.

Shot at Sopvumah, Naga Hills, in December.

I was fortunate in discovering this curious form so far to the eastward in a new locality, it having been hitherto only known from Nipal and, I think, Ceylon. Jerdon says that the upper tail-coverts are green, in my specimen they are concolorous with the back. The irides are red and the legs dark plumbeous. Bill black.

Wing 2.9," T. 1.8," t. 0.6," Bf. 0.3."





Description. Above, all dull dusky grey, tail darker and brighter. Wing black, the secondaries sepia-brown. Sides of head same as the back. A white streak extends from base of bill down the centre of throat, some white about the sides of breast. Lower breast, abdomen, and under tail-coverts bright yellow. The two outer tail-feathers with a white spot on inner web close to the tip. Inside wing white.

244. *CERTHIA NIPAENSIS*, Hodgs.

A single specimen from the Naga Hills.

248a. *SITTA NAGAENSIS*, Godwin-Austen, Plate IV.

Was first noticed at Sopvumah in the Nágá Hills last winter and I obtained several specimens on the watershed at about 6000 feet. It has been described by me in the P. Z. S., 1874. I give a drawing and description.

Description. Above slaty blue, wings and centre tail feathers same colour but paler. Quills dull pale black. A black streak through lores extending to ear-coverts and down side of neck. Beneath dull dirty white, purer on chin and throat, with a few white feathers bounding the ear-coverts. Flanks thighs and under tail-coverts dark rusty chesnut, all the latter with a terminal white spot. Outer tail feathers black, a white patch on inner web of the three outer, which are tipped grey and terminally black on outer web, white on middle portion of the outer web of the outermost tail feather.

Bill black above, grey below. Irides dark brown; legs green black.

L. 4.9," W. 3.0," T. 1.75," t. 0.68," Bf. 0.58," spread of foot 1.2."

260a. *LANIUS COLLURIROIDES*, Lesson = *HYPOLEUCOS*, Blyth.

Found in the Iril valley, Manipur, in February and March, rare; this and *L. tephronotus* were the only Shrikes seen in Manipur. L. 7.5," W. 3.5," T. 3.8," t. 1.0," Bf. 0.58."

286. *CHIBIA HOTTENTOTA*, Lin.

Garo and Khasi Hills.

289. *TCHITREA AFFINIS*, A. Hay.

Samaguting, April. ♂ in full plumage.

L. 8.5," W. 3.6," T. 11.25," t. 0.58," Bf. 0.65."

310. *MUSCICAPULA SUPERCILIARIS*, Jerdon.

Young agrees with a drawing by Dr. Jerdon of the above in immature plumage; my specimen is from the Naga Hills.

331. *MUSCICAPULA GESTIGMA*, Hodgs.

Dr. Jerdon had told me that he obtained this rare Fly-catcher in the isolated dense patches of forest, on the north side of Shillong Peak in the



Khasi Hills; on my return to Shillong I looked for and found it tolerably numerous, getting some 8 specimens in May and June.

♂ Description. Above, side of neck, and upper breast cyaneous blue; wings and tail are black edged with same. A narrowish white line from base of lower bill to breast, which, with abdomen and under tail-coverts, is pure white; legs dark brown; bill black.

L. 4.5," W. 2.4," T. 1.78," t. 0.6," Bf. 0.42."

I did not obtain a female, but it would appear, from a drawing by Dr. Jerdon, to be dull olivaceous above with white throat and breast.

323a. *ERYTHROSTERNA SORDIDA*, n. sp.

Three specimens of this bird were shot under Japvo Peak in January; having failed to identify it, I believe it to be undescribed.

Description. Above dull olivaceous brown, ochraceous on rump and upper tail-feathers. Tail umber-brown slightly tinged with ochre on outer web. Quills same as tail and pale-edged. The primary and secondary coverts very slightly tipped pale so as to form an inconspicuous bar on the wing. A pale ring round eye. Lores and ear-coverts dull grey with a rufous tinge. Beneath dull lutescent, darker on flanks. Centre of abdomen and under tail-coverts white.

L. 5.25," W. 2.6," T. 2.4," t. 0.5," Bf. 0.23." It is somewhat similar to *E. leucura* but the white basal half of the tail feathers in this last-named bird distinguishes it at once.

322. *SIPHIA ERYTHRACA*, Blyth and Jerdon.

This rare bird occurred under Japvo Peak, Naga Hills, at 6000 feet.

L. 5.0," W. 2.85," T. 2.2," t. 0.6," Bf. 0.35." A single specimen was procured by Jerdon at Darjeeling.

325. *ERYTHROSTERNA ACORNAUS*, Hodg.

I have this sombre coloured grey Fly-catcher from the Ihang valley in Manipur and from Shillong in the Khasi Hills; the specimen from the former locality measures, L. 4.0," W. 2.2," T. 1.6," t. 0.58," Bf. 0.33."

326. *ERYTHROSTERNA MACULATA*, Tickell.

Obtained in the Naga Hills by Mr. Wm. Robert, extending its range considerably to the eastward.

346. *PITTA CUCULLATA*, Hartlaub.

Given to me among other specimens from the Tipperah Hills by Mr. Ross Mangles. It is worthy of remark that now after 3 years of collecting I have never seen a *Pitta* on or near the northern range of hills south of the Brahmaputra (commencing with the Garos, and thence to the eastward) save the



large dull coloured form of Ground Thrush, *Hydronis Nipalensis* of Hodgson, which occurs on the Burrail range.

346a. *PITTA CYANEA*, Blyth.

Given to me by Mr. Chennell of the Topographical Survey, who obtained it in Hill Tipperah. It is one of the most beautiful of these richly coloured Ground Thrushes.

366. *PLANETICUS FUSCATUS*, Pall.

This bird, which agrees well with Jerdon's description, I shot on the Peak of Japvo, the highest point of the Burrail range just under 10,000 feet, during some hard weather in the early part of January; only one specimen was secured.

Description. Above umber-brown darker on the head, the feathers dark centered; rump ferruginous. Wing and tail dusky brown, coverts and secondaries edged pale rufous; a well-marked supercilium white, becoming broader behind the eye. Lores dark brown, ear-coverts the same but lighter. A rufous tinge on lower side of the neck; chin and throat sullied white, with an indistinct stripe, commencing as spots, extending from base of bill, down side of neck, and round to the ear-coverts. A gorget on breast grey brown, with rufous tinge near shoulder of wing and spotted with dark umber. Lower breast and belly pure white; under tail-coverts pinky ferruginous and pale tipped. Flanks and thighs tinged rufous the former spotted brown. Under wing-coverts rich ferruginous. The inside of quills grey.

Length 8.5," Tail 3.4," *t.* 1.3," *Bf.* 0.62." Irides dark brown; bill black above, dull yellow below; legs dull brown.

This bird much resembles *G. unicolor*, but is not so plainly coloured on the back.

373a. *PARADOXORNIS AUSTENI*, n. sp., Gould.

At Kuchai in the Naga Hills, at about 6000 feet elevation, in April, I obtained two specimens of this bird; I afterwards procured three at Shillong in the summer. They differed so much from my original specimens of *P. flavirostris* shot in the low marshy country at the base of the hills that I was inclined to consider them distinct. Mr. Gould, to whom I shewed these specimens and who had figured *P. flavirostris* from the original specimens sent home, pronounced them to be new to him, and has described and figured the species in the 'Birds of Asia,' under the above title. Not having his description, I will only mention that the chief points of difference lie in the pale nearly white colour of the under parts, the paler brown of the back, and a markedly different distribution of the black on side of head and breast.





My specimens measured—

L. 7·8," W. 3·3," T. 4·1," t. 1·05," Bf. 0·67," Bg. 0·4;" which dimensions are smaller than those of *P. flavirostris*.

Legs plumbeous with a slight tinge of green; bill yellow.

385. *PYCTORHUS SINENSIS*, Gmel.

This Babbler is very common in Manipur; dimensions of a specimen were:

L. 7·0," W. 2·6," T. 3·9" t. 1·05," Bf. 0·48."

390b. *TURDINUS GAROENSIS*, n. sp., Plate VIII.

Above pale rufescent brown, rather richer on head, wings, and tail; feathers of head pale-shafted. Beneath, all pale fulvous, and whitish on abdomen.

L. 4·5;" W. 2·4;" T. 2·1;" t. 1·0;" Bf. 0·5."

Bill is brown above, pale ochre below, legs pale corneous. Tarsus and claws strong, the hind toe and claw long. It was among the birds collected by Mr. Wm. Robert in the Garo Hills, to whom is due the credit of its discovery.

This bird is very similar in coloration to *T. Abbotti*; but the bill differs much in the form of the nostrils, which have, as in *Pnoepyga*, a lunular cover. This and *Turdinus brevicaudatus* would be, perhaps, better placed after *Pnoepyga*, with which they are closely linked through *Pnoepyga longicaudata*.

400. *POMATORHINUS RUFICOLLIS*, Hodg.

This is the most abundant form of the genus in the Naga Hills, loving the damp shady sides of the forest-clad hills. It is called by the Anghami Nagas "Moh mera." In coloration it is very close to *P. leucogaster*, Gould, but is much smaller. I give a description with measurements.

Above, olive green rather rusty on back of neck, head darker, tail uniform with back and distinctly barred. A white supercilium, 1·6 inches in length, extends from base of bill to far back on neck. Lores and ear-coverts black, a rufous patch on side of neck behind the latter. Wings coloured like back and tail. Throat pure white sullied on breast with a few pale brown streaks. Flanks, abdomen, and under tail-coverts pale olivaceous; inside of wing grey. Bill yellow; irides red-brown; legs yellowish grey.

L. 7·25," W. 3·0," T. 3·4," t. 1·09," Bf. 0·8."

408. *GARRULAX CERULATUS*, Hodg.

This would appear to be a rather common Laughing Thrush in the Naga Hills; and I saw specimens that had been caught by bird-lime, the natives then still further spoil them by pulling out the quills and tail-feathers. Jerdon does not mention the grey on lower part of the ear-covert



which forms a pale spot ; nude space round the eye dark grey, and a rufous patch from base of bill to under the eye.

L. 10.5," W. 4.0," T. 4.75," t. 1.6," Bf. 0.90."

409c. *GARRULAX ALBOSUPERCILIARIS*, Godwin-Austen, Plate VI.

Described in the P. Z. S. for 1874 as follows : " Above head and forehead reddish umber-brown paling on back of neck into dull olivaceous brown of the rump and whole of the wing ; tail pale red brown ; lores, a patch below eye, under ear-coverts, and supercilium which extends backwards for 1½ inches from the lores, white ; upper portion of ear-coverts dark brown ; chin and throat ruddy brown, paling on the breast into very pale dingy olivaceous, and into pale earthy ochre on abdomen and flanks ; under tail-coverts rufous."

Bill black ; legs fleshy brown ; irides dull red.

Length 9.0," W. 3.8," T. 4.2," t. 1.38," bill at front 0.7."

One specimen obtained in the Manipur valley, near Kaibi.

This dull coloured *Garrulax* is very similar in coloration to *G. rufifrons*, Sw., from Java, which is a larger bird and has no white supercilium nor white lower ear-coverts. Another similar form is *P. cinereifrons*, Blyth, from Ceylon.

409b. *GARRULAX GALBANUS*, Godwin-Austen.

Figured and described in P. Z. S. for 1874 as follows : " Above pale pure olivaceous on head, with a brown tinge on the back ; tail pale ashy-brown, the four central feathers tipped umber brown and barred, the four outer of the same colour in middle and broadly tipped with white ; wing concolorous with back ; quills pale umber brown edged grey. Very narrow frontal band, base of lower mandible, lores through eyes and ear coverts rich black ; beneath dull yellow, purer on the throat passing into the olivaceous on the flanks ; under tail-coverts white. Bill black ; legs ash grey ; irides red brown."

L. 9.0," W. 3.65," T. 4.1," t. 1.35," Bf. 0.8."

I first obtained this very handsome bird in the Manipur valley under the Koupru range, in February 1873. It associates in large flocks of from fifty to eighty or more, very noisy, following each other in a long string through the high grass, which they seem to frequent and prefer to the denser forest. When on the flight the white of their tail-feathers and under tail-coverts makes them very conspicuous. I observed it, also, on the head waters of the Barak and other streams that flow into the Manipur valley on the north-east. The nearest allied species is *G. gularis*, McClelland, which is also yellow on the breast ; but is dark slate grey above, with rufous on upper tail-coverts, flanks, abdomen, and vent.





## 413a. GARRULAX MERULINUS, Blyth.

This fine dull plumaged bird was obtained at the head of the Thobal valley in March; it presents a good deal the character of *Trichastoma Abbotti* in its coloration, and approaches *Turdus* in the spotted breast. No description being included in Jerdon's 'Birds of India' I give one here. It was described by Blyth (J. A. S. B., Vol. XX., p. 521 for 1851) from Cherrapoonjee.

Above umber with a rufescent tinge, head darker brown; wings and tail dark brown, both plain, the former having no pale edges. Forehead pale grey, a very narrow short white streak above the ear-coverts, commencing just behind the eye. Beneath dull pale rufescent ochre, the throat and upper breast spotted dull black, each feather having the black spot at the central extremity. Under tail-coverts rusty. Inside of wing and underside of tail feathers grey. Tarsus very strong. Bill thick and blunt, grey horny. Legs dull fleshy purple. Irides pale reddish brown, nude skin round the eye grey.

In Anghami Naga "Moh mépeh."

## 418a. TROCHALOPTERON CINERACEUM, Godwin-Austen.

Described in the P. Z. S. for 1874, with plate.

Above pale ashy olivaceous, greyer on the tail which is black for 0·7 inches at the terminal end, then tipped broadly white. Quills pale black, edged hoary grey; the secondaries tipped black, and their square tips edged white in keeping with the tail. Primary coverts near the bastard wing black forming a wing spot. Top of head black, extending in a narrow line down back of neck; lores and a broad band over eyes and ear-coverts dingy white; a few pure white feathers below eyes merging into ear-coverts; a narrow black line extends from posterior corner of eye over the ear-coverts and a moustachial streak of the same colour merges into indistinct spots. Chin white with a few black streaks; breast and under parts sullied white with a slight vinous tinge on the former and a dash of ruddy rufous on side of the neck, ochraceous on belly and under tail-coverts.

Bill pale yellow shaded dark above; legs fleshy brown; irides pale ruddy ochre.

Length 8·75", W. 3·22", T. 4·0", t. 1·25", Bf. 0·68".

In general style of coloration this bird approaches *T. variegatum*, Vigors. Its yellow bill and much smaller, weaker legs and feet, make it a very marked form of this genus.

Anghami Nagas call it "Lèhú."

## 426a. TROCHALOPTERON VIRGATUM, Godwin-Austen.

Described in P. Z. S., for 1874, as follows:





Head dark rufous brown, olivaceous on back, paler and greyer on rump; tail olive brown, with a slight tinge of rusty on basal half, finely and indistinctly barred; wing, three first quills grey on outer web, the rest and secondaries pale ferruginous, merging into rich chesnut at their base; coverts of the latter colour, narrowly tipped ochre, feathers of the winglet conspicuously white centred. Lores chesnut, a white supercilium; ear coverts pale rusty; chin and throat rich dark chesnut; breast and abdomen bright ochraceous; under tail-coverts darker brown. As viewed from below, the tail is grey brown, each feather faintly tipped with white.

All the feathers of the head, upper back flanks, and breast are centred white or pale ochre, and those of head and neck are rigid.

Bill black; legs pinky grey; irides pale brown.

L. 9.0", W. 3.5", T. 4.85", t. 1.3", Bf. 0.6".

I obtained a single specimen near the village of Rázámi under the Kopamedza ridge at 5,000 feet in Naga Hills in the month of January. Starting just after sunrise for the peak above the village, I observed first one and then another bird, not familiar to me, cross the path in front into some thick scrub. In this we could only perceive their whereabouts now and then by the moving twigs. Followed about, they became separated and the specimen in my collection got into a low tree where it uttered a very sweet call of a few notes, which was answered by its mate; my Shikari then managed to get sight of it and shot it. I never saw the species again.

This strikingly plumaged bird is very close to *T. setafer*, Hodgson, with which I have compared it, but it differs materially. *T. lineatum*, Vigors, is another allied form which extends to the N. W. Himalayah while *setafer* is from Nipal and Bhutan.

#### 427a. ACTINODURA WALDENI, Godwin-Austen.

Described P. Z. S. for 1874, with figure by Smit., it is thus described.

Head full crested, extending back for more than an inch, hairy grey edged pale; back rich brown, with a greenish hue, becoming more rufous on the rump and upper tail-coverts; base of tail feathers chesnut, for half their length narrowly barred with black, then black for terminal inch, the three outer tipped white; quills black, outer web chesnut at base, then barred with black, and the narrow terminal portion grey; primary coverts black, the winglet feathers grey, barred black; ear coverts hoary; side of head hair grey; chin, breast, and abdomen rufous brown, paler on chin and throat, the whole having a streaky appearance, the feathers being centered with a darker shade.

Bill grey; legs and feet fleshy brown; irides pale grey.

L. 8.0", W. 3.48", T. 3.45", t. 1.2", Bf. 0.62".

I first shot this bird on the peak of Japvo at about 9000 feet on the Burrail range, Naga Hills. It keeps to the tops of the forest trees.





This is a small form of *A. Egertoni*, Gould, which occurs in the same locality; every character is repeated in the two forms, modified yet each distinct; no better example of gradual change in size and coloration could well be found.

430*b*. *SIBIA PULCHELLA*, Godwin-Austen, Pl. VII.

I shot two specimens only of this new and beautiful subdued coloured *Sibia* in April 1873, when making the ascent of the Peak of Khunho, Eastern Burraill range, Naga Hills, at about 8000 feet. In companies of about half a dozen, they haunted the tops of the Rhododendron trees, busily searching for insects in the flowers, and covering their foreheads and throats with the pollen.

I described it in the 'Annals and Mag. of Nat. History,' February, 1874, as follows.

Description. Above ashy grey, bluer on the head, the two centre tail feathers umber-brown terminating (each colour  $\frac{3}{4}$  inch) in rich black, followed sharply by dark grey. The outer tail feathers are tipped in like manner with grey, but the black increases on each feather outwards, and on the last extends to its base. Shoulders of wing blue grey, with a bar of pale chocolate-brown coming in at the base of the black primary and secondary coverts. Quills grey-black, the primaries edged pale hoary blue; the secondaries blue grey, the last three are umber brown and the two last are edged narrowly on outer web with black. A narrow frontal band and lores black extending both over and below the eye to base of the ear-coverts. Beneath ashy blue with a vinous brown tinge upon the lower breast and abdomen. Bill black; legs horny brown; irides?

Length 9.5", W. 4.1", T. 4.85", t. 1.3", Bf. 0.75".

In the general distribution of the coloration and in form it resembles *S. gracilis*, which is extremely common in the same hills, but seldom met with above 6000 feet.

437*a*. *MALACOCIRCUS (LAYARDIA) ROBIGINOSUS*, Godwin-Austen, Pl. V.

I have described this in P. Z. S. for 1874: "Above rich rusty brown, darker on the head, with black shafts to the feathers; wings and tail of same colour, the latter distinctly barred; lores white, beneath pale rufescent, nearly white under chin, and pale on centre of abdomen.

Bill black, well curved; legs pale corneous or dull grey brown; irides nearly white.

L. 9.5", W. 3.0", T. 4.8", t. 1.6", Bf. 0.62".

The first two specimens of this bird I shot in long grass near the Logtak Lake, Manipur, and again obtained specimens near Kaibi in the same valley. It is essentially a grass-bird, with all the habits of *M. terricolor*, Hodgson. It associates about a dozen together, flying through the grass,



one after the other, in a scattered line, never abiding long in one place. A nearly of this bird, *M. subrufus* from Malabar, is not so intensely rufous, has no white on the throat, is greyish on the head, and has a yellow lower mandible.

538a. *PRINIA RUFULA*, Godwin-Austen, Pl. IX, Fig. 1.

Described in P. Z. S. for 1874. I copy the original description from that Journal. Above, head ashy brown, becoming more russet on back and pale rufous on rump and upper tail coverts; tail brown indistinctly barred, tipped white on the outer tail-feathers with a subterminal dark spot; wing dark brown, with pale rusty brown edgings to primaries and secondaries; lores, round eye and ear-coverts pale ash, below chin sullied white, greyer white on breast; ochraceous on abdomen; flanks and thighs pale brown.

Bill black, both above and below; legs pale corneous, with darker claws; irides ruddy ochre.

L. 4.75", W. 1.82", T. 2.4", t. 0.75", Bf. 0.4".

This species was common in the Naga Hills and Manipur, and replaces *Hodgsoni*, Blyth, on the Khasi Hills side. It is quite distinct from *P. gracilis*, Franklin, which has a marked pale rufous forehead, and can be distinguished at a glance from the former bird, which is remarkably ashy with dark ear-coverts.

539a. *CISTICOLA MELANOCEPHALA*, And.—*RUFICOLLIS* Walden, Pl. X, Fig. 1.

I obtained several specimens of this form in the Manipur Hills, where it appeared common in the grassy valleys at head of the Barak; some specimens do not shew the rufous on the neck so much as others. My specimens are identical with Lord Walden's from Assam, named by him *ruficollis*, but Dr. Anderson's title has priority.

539b. *CISTICOLA MUNIPURENSIS*, Godwin-Austen, Pl. IX, Fig. 2.

Described in P. Z. S. 1874; the original description follows.

"Above dark umber brown, feathers margined pale ochre on head, broader and more rufous on back; upper tail-coverts plain rufous brown, the feathers on nape are paler rufous and dark shafting is subdued; tail dark umber, the two centre feathers margined rufous brown, viewed from below tipped whitish, with subterminal dark spots; white on chin, throat, and centre of abdomen, rufescent on breast and flanks. Pale round eye.

Bill black above, pale beneath; legs fleshy brown.

L. 4.25", W. 2.0", T. 1.65", t. 0.76", Bf. 0.40".

I obtained four specimens of this species on the reedy sides of the Logtak Lake, Manipur valley. It differs on comparison with *C. schænicola* (Pl. X, fig. 2) and *melanocephala*, which I also obtained, being intermediate in coloration, and may be known at once by the dark edging along



the shafts of the centre tail-feathers, which in *melanocephala* are wholly dark, and in *schænicola* are banded broadly rufous, terminating in black and white. It is very near *Cis. russica*, Wall., from the Island of Bouroo, Malay Archipelago, which is more rufous on the head and breast.

471a. *ORIOLOUS TENUIROSTRIS*, Blyth.

Two specimens were shot by my collector in a thick wood near Lumlangtong or Bishunpur, Munipur, on the 18th February.

♂ L. 10·0", W. 5·8", T. 3·65", t. 1·0", Bf. 1·2".

481. *PRATINCOLA CAPRATA*, Lin.

♀ In open grass of Munipur valley, in February; may be known at once from *Indica* and *leucura* by its rufous upper tail-coverts.

500. *RUTICILLA AUROREA*, Pallas.

This Redstart was numerous in the stubble of the rice-fields bordering the Barak valley near its sources in the Naga Hills, during the month of January.

531a. *ORTHOTOMUS FLAVOVIRIDIS*, Moore, = *EDELA* apud Blyth.

The common Malaccan Tailor-bird, I met with in the forest of the Dunsiri near Dimapur, and it agrees well with Malayan specimens. The bill alone being rather shorter and more slender.

The discovery of this bird in Assam extends its range considerably.

W. 1·85", T. 1·70", t. 0·70", Bf. 0·60".

I also got it at the base of the Garo Hills near Shushang, so that it, no doubt, extends all through Tipperah, Arracan, &c.

538. *PRINIA HODGSONI*, Blyth.

This little Wren-warbler is common enough in the hills about Shillong.

Jerdon's description being short, I give that of the Khasi form in more detail.

Description. Above ashy brown, greyer on head, tail pale brown indistinctly barred, with black subterminal spots and white tipped. Wings pale brown edged pale rufescent. Pure white on chin, grey on throat and breast and white on abdomen and under tail-coverts. Some specimens have a faint tinge of ochre on the flanks and thighs. Orbits brown, irides orange ochre. Bill black above and below, legs yellow brown.

L. 4·35", W. 18·2, T. 2·15", t. 0·68", Bf. 0·4".

538b. *PRINIA RUFESCENS*, Blyth.

This bird agrees with specimens of *P. rufescens* from upper Burmah collected by Dr. Anderson when on the Yunan Mission, but it is somewhat larger and more intensely rufous.

W. 1·85, T. 2·55, t. 0·9", Bf. 0·4".





## 542. GRAMINICOLA BENGALENSIS, Jerdon.

This bird is not easy to bag, it shifts about through the grass seldom rising, and if once scared gets low down near the ground and hides. I obtained one specimen at the head of the Barak valley, Manipur.

## 548. SUYA FULIGINOSA, Hodgson.

Is quite distinct from *S. atrogularis*, and I obtained several specimens at Shillong.

Bill above black, beneath palish, legs pale flesh, feet brown. Lores and supercilium pale. Irides ochre, tarsus stout.

L. 6.4", W. 2.0", T. 3.27 to 4.4, t. 0.8", Bf. 0.42.

*Suya atrogularis*, Moore, its nearest ally, has the bill black above, dark horny below, legs orange fleshy, irides pale ochre, white on upper margin of eye and a few of the dark ashy feathers of the supercilium tipped white.

## 552a. NEORNIS ASSIMILIS, Hodgson.

I shot this bird both in the Naga Hills and at Shillong; it is Blyth's *Drymæca brevicauda*. As it is a bird little known, a description here may be useful.

Above brownish olivaceous, tail umber brown and rather more rusty brown on wing, pale line through lores over eye. Below dusky whitish brown, paler on chin. A pale ring round eye, and a slight tinge of yellow on inside of shoulder of wing.

L. 4.75", W. 2.1", T. 2.3", t. 0.8", Bf. 0.38".

## 568. REGULOIDES EROCHROA, Hodgson.

Naga Hills. February.

## 568a. REGULOIDES FULVOVENTER, n. sp.

Above centre of head, light yellow green bounded on either side by broad dusky bands; and nape pale greenish ash. Pure ash on back, upper tail-coverts grass green as well as the two central tail feathers and outer edge of all the others. The two outermost as viewed from below have a narrow pale yellow edging on outer web. Shoulder of wing ash grey, coverts ash brown with a narrow white bar. Quills dusky brown, the secondaries well marked with grass green. A pale yellow supercilium. Ear-coverts pale, chin very pale yellow; throat, breast, and abdomen pale pearly white, under tail-coverts bright yellow.

L. about 3.75", W. 2.0", T. 1.4, t. 0.70", Bf. 0.4".

Bill above dark brown, below orange; legs and feet grey. This Warbler is so distinct from any I have been able to look over, that I think it is a distinct species. I obtained it when in the low country of the Dunsiri, Assam.



566. *REGULOIDES CHLORONOTUS*, var. Hodgson.

This form was very common in the opener forests on the slopes of the Burrail range.

W. 1.85", T. 1.35", t. 0.7", Bf. 0.25".

It is very similar to *chloronotus*, but the band on rump in my three skins is nearly white.

574. *ABRORNIS FLAVIVENTRIS*, Jerdon.

From the Garo Hills; one specimen only.

578. *ABRORNIS CASTANEOCEPS*, Hodgson.

This pretty little *Abrornis* I saw several times in the Naga Hills when the forest was pretty open, and I shot a specimen at the head of the Iril valley in Munipur; I believe it has only been previously procured in Nipal and Sikkim.

Description. Crown of head dark chesnut with some darker feathers towards nape, which is dark ash. Back grassy green, upper tail-coverts pale yellow; centre tail feathers pale dusky brown, the two outer white with a dusky edging on the terminal  $\frac{1}{3}$ ds. of their length. Wing grass green, the coverts tipped yellow forming one distinct and lower band and one indistinct upper one. Beneath, chin and breast bluish white. Flanks, inside shoulder of wing, belly and under tail-coverts canary-yellow. Bill above dark brown, below orange; legs olive brown.

L. 3.6", W. 1.95", T. 1.6", t. 0.66", Bf. 0.29".

588a. *ENICURUS LECHENAULTII*, Temm. = *CHINENSIS*, Gould.

This bird was given to me by Capt. Badgley of the Topographical Survey, who shot it in the Lushai Hills in company with *G. immaculatus*. Obtaining this species in this locality so far west is very interesting, and marks its extreme limit on the Indian side.

Length about 10", W. 4.2", T. 5.8", t. 1.28", Bf. 0.9".

The measurements of the Hill Tipperah *E. immaculatus*, Hodgson, are—  
Length about 8", W. 3.6", T. 4.9", t. 1.1", Bf. 0.61".

589. *MOTACILLA MADERASPATANA*, Briss.

On the upper Barak river, in February, a pair were shot.

595. *NEMORICOLA INDICA*, Gmel.

Shillong, Khasi Hills.



614. *LEIOTHRIX LUTEUS*, Scopoli.

Shillong, Khasi Hills.

It is not so common on these hills as *L. argentauris*, and I seldom came across it.

618. *MINLA IGNOTINCTA*, Hodgson.

Was very numerous in the woods about Sikhamih, Naga Hills, in January.

622. *PROPAREUS VINIPECTUS*, Hodg.

This "Plain brown hill Tit" was only seen on the highest part of the Burraill range on Japvo Peak, about 9,000 feet.

Bill black, irides pale ochre, legs and feet pale umber-grey.

L. 4.5", W. 2.2", T. 2.1", t. 0.9", Bf. 0.3".

624. *IXULUS CASTANICEPS*, Horsfield.

This is not an uncommon bird in the Naga Hills east of the Burraill at 5—6,000 feet, and as there is no description of it in Jerdon I give one here. Above dark olivaceous, tail brown, forehead rufous merging into the olivaceous brown of the top of head. Wing umber-brown. A white supercilium from above eye extending to the neck, fading into some streaky buff and black feathers behind the ear-coverts. A black band borders the white above. Lores and ear-coverts sooty. Chin, throat, and upper breast buffy white, sullied white on abdomen, flanks olivaceous. Irides dark red-brown; legs and feet pale fleshy. Bill grey-brown, feathers of head scale-like.

L. 5.58", W. 2.2", T. 2.5", t. 0.95", Bf. 0.45".

628. *YUHINA NIGRIMENTUM*, Hodg.

Sent to me by Mr. Robert from the Naga Hills.

632. *SYLVIPARUS MODESTUS*, Burton.

This very small form of Tit was numerous, in April, on the high parts of the Eastern Burraill range, just under the peaks of Japvo and Khunho, in small parties together. It moves rapidly and actively about the upper branches, and round and up perpendicular branches like *Sasia*, which its long hind-toe enables it to do. It was busy feeding about the Rhododendrons then in bloom.

The tips of the secondary coverts are pale, forming an inconspicuous band on wing; feathers of the head rather stiff, broad, and long, nearly hiding the bright yellow supercilium.

L. 3.5", W. 2.3", T. 1.5", t. 0.58".

634. *ÆGITHALISCUS ERYTHROCEPHALUS*, Vigors.

Legs orange, irides yellow-ochre or yellow.

W. 1.87", T. 2.05", t. 0.6", Bf. 0.2".

Naga Hills, several specimens obtained near Kohimah in January.



644. *PARUS MONTICOLUS*, Vigors.

Common enough in the Naga Hills.

The outer web of the outer tail-feather is white.

660. *CORVUS CULMINATUS*, Sykes.

Shot in the Naga Hills, the only Crow seen there, and at Sopvohmah was extremely numerous in January, associating together in large flocks.

672*a*. *UROCISSA MAGNIROSTRIS*, Blyth.

Shot at Sikhami, Naga Hills, at 5,000 feet, in February.

L. 26", W. 7·4", T. 17", t. 2·15", Bf. 1·46".

Irides dark brown, bill and legs orange red. Primaries dull cobalt-blue.

691. *SARAGLOSSA SPILOPTERA*, Vigors.

Both ♂ and ♀ received from Garo Hills from Mr. W. Robert.

699*a*. *MUNIA SUBUNDULATA*, Godwin-Austen.

Described in P. Z. S. for 1874.

"♂. Above pale umber-brown, darker on the head, pale grey on rump, a few feathers edged paler; the upper tail-coverts dull yellow; tail-feathers olivaceous umber-brown, faintly edged with same yellow tint; quills pale chesnut on outer web, umber-brown on the inner, and indistinctly barred. Sides of head umber-brown becoming dark chesnut on chin and throat; breast and flanks white, feathers very narrowly barred or margined rufous-brown; abdomen and under tail-coverts dull white, the latter sparingly streaked with brown; feathers of the back finely pale-shafted."

Bill dark grey; feet plumbeous; irides red.

L. 4·3", W. 2·10", T. 1·70", t. 0·55", Bf. 0·45".

♀ is a duller brown above, with no white shafts to the feathers, a distinct green tinge upon the tail feathers, otherwise as in *M. undulata*.

Change of coloration in young males commences on the centre of the throat, extending towards the base of bill into the dark chesnut, and towards the breast into the undulated colouring of those parts.

Obtained in the Manipur valley, both on the Logtak Lake and head of the Barak river. It is a very close to, but distinct from *M. undulata*, Latham, in which the undulations are broad, the general coloration is more rufous, and the tail more pointed. It is also close and intermediate to *M. nisoria* from Java and Malacca; but in that bird the tail-coverts are grey, with no trace of the fulvescent tinge common to the two continental forms. Lord Walden was the first to notice it as distinct, in specimens in his collection received from Burmah which are identical with my own from Manipur, and he kindly allowed me to describe it.





## 703. MUNIA MALABARICA, Lin.

Specimens were obtained at Kooshtia, in November.

## 708. PASSER CINNAMOMEUS, Gould.

Under Burrail range, Naga Hills; not often seen. At Shillong it is commoner.

L. 5.2", W. 2.63", T. 1.98", t. 0.68, Bf. 0.42".

## 710. PASSER MONTANUS, Lin.

Garo and Khasi Hills.

## 719. EMBERIZA FUCATA, Pallas.

This bird from head of the Barak valley differs from Jerdon's description in colour of legs and feet, which have no tinge of yellow, being a dull flesh-colour. The outer tail-feather is white on basal end, extending as a diagonal bar through inner to the outer web; the penultimate is tipped white on inner web. Centre tail-feathers rufous with black centre, and the rump is rufescent with small black streaks.

L. 6.45, W. 2.9", T. 2.62", t. 0.85", Bf. 0.42".

## 724. MELOPHUS MELANICTERUS, Gmelin.

During February and March, this handsome Bunting was very numerous in the high grass skirting the river Iril, Manipur valley, particularly about Kaibi.

♂ L. 6.5", W. 3.35", T. 2.85", t. 0.75", Bf. 0.48".

## 762. ALAUDALA RAYTAL, Buch. Hamilton.

Occurs abundantly on the sandy churs of the Brahmaputra, and I shot it near Gwalpara, in November.

L. 5.25", W. 3.35", T. 2.0", t. 0.75", Bf. 0.40".

On the same churs, among low bushes, *Pratincola leucura* was very common; *Cotyle sinensis* and *Prinia flaviventris* were also procured.

## 771. TRERON NIPALENSIS, Hodgson.

I have compared my specimens with the above from Sumatra and Malacca, and they are identical. It was not uncommon in the Dunsiri forest between Dimapur and Golaghat, and I shot it again on the road to Shillong near Gowhatty. It does not appear to range above 1,000 feet.

♂ measures L. 10", W. 5.55", T. 3.86", t. 0.83", Bf. 0.56".

## 782. ALSOCOMUS PUNICEUS, Tickell.

This beautiful Wood-pigeon was shot at the hot springs of the Namba on the Dunsiri river in April. These springs are saline and attract enormous numbers of *Carpophagæ* (*insignis* and *sylvatica*) to their waters to drink;





and when the above bird was picked up, a quantity of the saline water poured out of its mouth.

797. *TURTUR HUMILIS*, Temminck.

Garo Hills.

806a. *CERIORNIS BLYTHII*, Jerdon.

♂ described in the J. A. S. B. 1870, p. 60.

This bird is very difficult to obtain, and I failed to get the female, which has never yet been seen by any European. I heard them in the forest on the ascent to Khunho, but although I offered 20 Rs. for a bird, the Nagas only once succeeded in getting one; this, a male, was snared near the village of Viswémah, but thinking that I wanted the feathers only, the natives had, to my utter disgust, picked and eaten it. Another male was brought to Captain Butler, the Political Agent of the Naga Hills, when passing through the village of Jotsomah (also under the Burrail range), but it had been skinned so badly that it was falling all to pieces and the most we could do was to save a few of the better pieces of the skin for the sake of the feathers. The Burrail range is the extreme western limit of this bird, and it has not been got even there, west of the peak of Paona, where the specimen in my collection was obtained by Mr. Wm. Robert, a most assiduous collector, whom I have to thank for very many good birds. Its haunts are in the dense forest from 6000 to 10,000 feet, and this renders it such a difficult bird to bag, and the only chance of shooting a specimen would be by coming upon it suddenly along a more open bit of ridge, or in one of the higher clearings. It was unknown to the Nagas of Asalu. It probably extends some distance to the eastward until it meets its near ally *C. Caboti*. Jerdon was the first to notice it in the 'Ibis' (1870, p. 147) from the Suddya Hills.

823a. *BAMBUSICOLA HOPKINSONI*, nov. sp., Godwin-Austen.

♂ Description. Above head plain dull brown, becoming rufous on back of neck, back dull olivaceous grey. The feathers of upper back and scapulars centered with dark chesnut, the secondary coverts more broadly so and terminated in black. The feathers of the back have one or more small white spots on the outer margin, giving the back a well-speckled appearance. The rump feathers are indistinctly barred white with a single black spot and increase in size to the upper tail-coverts where the spots are conspicuous, heart-shaped with chesnut centres. Quills ruddy chesnut, the secondaries and tertiaries mottled with dark brown. Tail ruddy-brown, feathers narrowly barred with pale ochre having dark mottled edgings. Lores pale buff extending as a supercilium; ear-coverts, chin, and upper throat pale ferruginous; a black streak extends from posterior margin of the eye down side of neck; from lower part of neck for a short distance the feathers are centred rufous with



pale spots on outer margin, rest of breast buff, lighter on abdomen and sides ; barred on centre of breast and flanks with black, the barring not shewn but each feather has a terminal black heart-shaped spot, which is a conspicuous character.

Legs pale grey with green tinge ; bill pale horny-black, pale beneath, irides dark brown.

L. 14.5," W. 6.25," T. 5.0," t. 1.2," Bf. 0.9."

Through the kindness of Dr. J. Anderson, I have examined a specimen of *B. Fytchii* ♀ from the Yunan Hills, and with this the Khasi bird is evidently very closely allied, if indeed it should not turn out to be identical ; but between my bird and *B. Fytchii* there are differences which, though perhaps small, separate them, and until birds of the same sex are placed side by side, we cannot well decide whether they are two *good* species or not. To begin the enumeration of the points of difference, the Yunan bird (A) is much smaller than the Khasi one (B) :

(A) *B. Fytchii*, t. 1.7," mid-toe 1.7".

(B) *B. Hopkinsoni*, t. 2.1," " 2.1".

Other dimensions of (B.) L. 14.5," W. 6.25" T. 5" Bf. 0.9".

In (B) the feathers on the flanks have the black terminal spot invariably heart-shaped, whereas in (A ♀) the corresponding feather is a diamond form (*vide* also the figure of ♂ in P. Z. S., 1871, Pl. XI).

In (A) the whole of the lower back is plain olivaceous with a few of the longest upper tail-coverts having a black triangular (isosceles-shaped) terminal spot followed by a white base.

In (B) these spots are much larger and broader and extend up over the rump, and the feathers are more distinctly barred with brown and have a rufous tinge at the base.

In (B), and I think this is the most important difference, all the feathers of the upper back are spotted with white, and this feature extends to the wing coverts and shoulder of wing. In (A) there is no tendency to this coloration nor is there any trace of it in the plate in the P. Z. S.

(A.) is dark brown on chin, (B.) very pale.

(A.) tail not distinctly barred, (B.) tail well-barred and the pale bars edged with black.

(A.) tail beneath dull brown, (B.) tail ruddy brown.

However, whether they be separable or not, and a larger series will decide this, one important point is finding this bird so far to the westward, within Indian limits ; it has never before been recorded. My specimen was shot at Shillong on grassy slopes at 5000 feet. Before I had seen the bird in hand, I had twice seen it running on the pathway and noticed its very different flight from that of the Black Partridge, which at first I thought it was. Now that attention is called to it, other specimens will no doubt turn up.



825*b*. ARBORICOLA INTERMEDIA, Blyth.

In my 2nd list I recorded *A. rufogularis*, Blyth, from N. Cachar; this I now find, on obtaining another specimen in the Naga Hills, to be *intermedia*, originally described as probably from Arakan (J. A. S. B., XXIV, p. 377). But *A. rufogularis* will still remain on the list with a new locality, the Naga Hills, where Captain Butler obtained a ♀, which at the time I could not make out from never having met with it before. *Intermedia* may be known at once by the plain, unbarred back and by the absence of the black separating the rufous of the neck from the grey of the breast; it is in front spotless, but has large round black spots on the side of neck. Dimensions of *intermedia*, Blyth, from Naga Hills:

W. 5.75," T. 2.6," t. 1.7," Bf. 0.7, mid-toe and -claw, 1.82."

Legs red. Bill black.

*A. rufogularis*, ♀, from Naga Hills, legs pale fleshy violet, measures—

W. 5.32," T. 2.5," t. 1.58," Bf. 0.5," mid-toe and -claw, 1.75."

I found the nest of *Arboricola* in the forest at the head of the Jhiri River, N. Cachar, constructed close in under the large root of a tree near the base; it was lined with dry leaves which then (March) strewn the ground and contained three eggs of a light brown colour.

## 833. TURNIX OCELLATUS, Scop.

Shillong, Khasi Hills.

## 834. TURNIX DUSSUMIERII, Temm.

Naga Hills.

## 835. TURNIX SYKESII, A. Smith.

Khasi Hills.

## 895. TOTANUS STAGNATILIS, Bechstein.

Munipur, in March.

908*a*. PORZANA BICOLOR, Walden.

The original specimen, from which the description was made by Lord Walden, came from Darjiling. It was very interesting to find it again occurring in the Khasi Hills (June). I got it in a small piece of marshy ground in the station of Shillong, together with the species of *Porzana* that follow. Bill glaucous green with slight tinge of red near base of mandibles and tipped grey; irides crimson-red, orbits red; legs pale dullish vermillion.

L. 8.75," W. 4.4," T. 2.4," t. 1.5," Bf. 0.9."

Mid-toe and -claw, 1.75," hind-toe and -claw, 0.65."

Two specimens were brought to me alive by a Khasia with one egg which he said was that of this bird; it measures 1.4" in major diameter,





1.0" in minor diameter, is of a creamy white colour, unspotted on the smaller end, distantly so on the lower  $\frac{2}{3}$ ds., closely on the larger end, the spots all pale grey, with light and dark shades of sepia. The birds did not live long in confinement, although they ate greedily of earth-worms.

Captain Elwes tells me that he procured this bird in the interior of Sikkim, at Choongtam, at an elevation of 5000 feet, in September 1870; to him therefore belongs the credit of being the first to discover it. This specimen, with others, was lent by him to Mr. A. O. Hume for description, but the box containing them appears to have been lost on its way to Agra. Captain Elwes found this Rail in rice-fields which are the highest in Sikkim; my bird was found in similar ground, and at the same elevation.

911. *PORZANA FUSCA*, Linnæus.

Obtained at Shillong in June.

L. 7.5," W. 4.0," T. 2.2," t. 1.35, Bf. 0.75."

Mid-toe and -claw 1.6". Bill dull dark green, orbits vermillion, irides orange, legs pale vermillion. The under tail-coverts are dark umber-grey in my specimen (not olivaceous as stated in Jerdon), and closely barred with white.

913. *RAILLUS STRIATUS*, Linnæus.

Dimensions are smaller than those given in Jerdon, but the bird does not differ in coloration from specimens from the rest of India.

L. 9.5," W. 4.75," T. 2.0," t. 1.65," Bf. 1.4."

Mid-toe and-claw 1.8," hind-toe and-claw 0.62," irides sienna-brown, legs and feet ash-grey. Bill pink at base, pale grey-brown at tip, brown above.

The bill is much lengthened, and in the presence of a shield-like expansion at base above, approaches nearer to the Water Hens (*Gallinula*) than other Rails. The tarsus is very stout and the feet are shorter and stouter than in *Porzana*.

It occurred in the same swamp with the two preceding forms.

917. *MYCTERIA AUSTRALIS*, Shaw.

Bisnath, Assam; in December.

920. *CICONIA LEUCOCEPHALA*, Gmelin.

On Brahmaputra.

949. *ANSER INDICUS*, Gmelin.

In large flocks on the Logtak Lake, in February; they leave the water to feed in the stubble of the rice-fields in the morning and evening.



955. *CASARCA LEUCOPTERA*, Blyth.

I got this bird at Dimapur on the Dunsiri River; it appears to prefer sluggish streams like this flowing through forest, for I once flushed this bird in such a haunt in the interior of the Garo Hills. I am informed by Mr. James of the Police at Samaguting that it breeds on the Dunsiri, and that he had shot the young birds. It is called the "Deo Hans" in Assam. Mr. J. Burt of Tezpur informs me that the white-winged Sheldrake perches on trees, and that one was killed thus sitting by Mr. J. Martin of Paniputa Tea plantation near Tezpur.

The habits and haunts of this species are as completely the reverse of its congeners *rutila* &c. as they well can be.

962. *DAFILA ACUTA*, Lin.

Tolerably abundant on the Beels in Munipur, in February.

963. *MARECA PENELOPE*, Linn.

Very numerous in Munipur, in February.

971. *FULIGULA CRISTATA*, Ray.

Munipur, on the Lamphel.

975. *PODICEPS PHILIPPENSIS*, Gmelin.

Beels, Munipur.

*Anas pacilorhyncha*, Pennant was a very common duck on the Logtak Lake, in February. I have nowhere seen it so numerous.

*General notes on other species.*

The specimens of *Ephialtes* that I have hitherto procured in the Naga Hills and Asalu, are undoubtedly *lempigi*, Horsfield, like birds from Java, &c., of which the very rufous one mentioned in my first list is in that particular phase of plumage.

*Micropternus phaiiceps*, Blyth.

I have two specimens in my possession, one of which is from the Tipperah Hills, the other from Dimapur, Assam; both are much darker and much more distinctly barred on back than others, and have at the same time stronger bills; and both are smeared all over the head, tail, and feet with some dark gummy substance that they are evidently fond of getting into.

*Cyanops Asiatica*, Lath.

I notice that all the specimens in my collection from these Eastern Hills, have a small triangular patch of scarlet (0.3" wide) at the gape, a point not noticed in any description I can find, nor is it shewn in the figure of this species in "The Marshalls'" monograph of the Barbets,



Pl. 26. I pointed this out to Lord Walden, and having looked at his specimens from the N. W. Provinces and Nipal, found in them the slightest trace of a few very minute red feathers near the gape; these are so small that in a stuffed specimen they might be easily overlooked; in birds from Assam and Munipur this red spot is so well developed that it could not escape attention.

*Eumyias melanops*, Vigors.

Breeds in the Khasi Hills, on the Shillong or northern side, in April. Young birds well-fledged were brought in to me in the middle of May.

*Harpactes Hodgsoni*.

Two specimens of this species, from the Garo Hills, have the crown of the head whitish-grey mixed with pink and whitish towards the nape, in other respects they are identical with the above species. Are they in immature plumage?

*Pomatorhinus McClellandi*.

Birds from the Naga Hills, I notice, have a longer bill, and the spottings on the breast are darker and occasionally form a demi-collar.

I have received a specimen of *Arachnechthra Asiatica*, Latham (= *carrucaria*, Lin.) from Hill Tipperah, which I considered at first to be *intermedia*, Hume. However, on comparing it carefully with specimens from Candeish Gwalior, Manbhoon, Umbala, Lower Bengal, Garo Hills, and Tonghú, I can detect no difference whatever in coloration, and their bills run so close in size that I do not consider it a species that will stand,—certainly not on the very small and sole difference of a slightly longer bill. If such single characters are to be allowed weight, we should have species multiplied *ad infinitum*, and if the Tipperah form of *A. Asiatica* should be larger, it is sufficient to notice the peculiarity as a large variety, but why encumber nomenclature, when no other differences exist, with another name and create a new species.

A female *Niltava* in young plumage shot under the peak of Japvo, Naga Hills, in January, when it would nearly have arrived at maturity, differs so much from the dimensions of *N. grandis* (to which it is nearest in size) and *N. sundara* that I am inclined to consider it an intermediate new form. Females of *grandis* and *sundara*, irrespective of size, have a very similar coloration; the species I have before me, differs slightly from both, a difference it is not easy to explain in writing, and so often to be noticed in allied forms. The inside of the wing is pearly grey, and the tail is not so ruddy dark a brown as in *grandis*. A young *grandis* ♀ in my collection, with the head still well spotted with pale rufous, closely equals in size birds in full plumage, with the greyer head and nape. My bird has no sign of the blue shoulder-spot, and the first primary





is proportionably much smaller and shorter than in undoubted young *grandis*. I give a full description so that the next collector visiting the Naga Hills may be on the look out for an intermediate form of *Niltava*, and if such there be, obtain the male.

Description. *Niltava* ? ♀ of first year. Above olivaceous with an ochre tinge. Ashy on head, more rufous on upper tail-coverts. Tail ruddy dark brown. A pale ring round eyes, less conspicuous above than below, wing feathers closed, umber brown. Lores tinged pale rufous. Beneath chin pale rufous, with a few pale grey bars, breast to abdomen rufescent ashy, thighs pale ash-brown, a pale dull streak extends from chin to upper breast, ending suddenly, abdomen sordid white, under tail coverts pale ochre brown, darker centered and tipped pale, inside shoulder of wing dull ochre. Quills inside pearly-grey. Shot in underwood on ascent to Japvo peak January 1873, three were seen together. The bill is black, shorter and stouter than in *grandis*. Irides dark brown.

*N. grandis*. = L. —, W. 3.95", T. 3.9", t. 0.92", Bf. 0.52".

*N. ?* = L. 7.4" W. 3.9", T. 3.5", t. 0.78", Bf. 0.44".

*N. sundara*. = L. — W. 3.1", T. 2.5", t. .80", Bf. 0.42".

*Pnoepyga longicaudata*, Moore.

Is very numerous in August in the large woods below the peak of Shillong, and I got several in that locality. There can be no doubt that the bird in Griffith's collection came from the north-east frontier, and not from Afghanistan. It is a shy bird keeping to the dense underwood. The irides are dark crimson.

358a. *Turdulus pallens*, Pallas.

Was frequently noticed in the Naga Hills, and I obtained a specimen on Japvo Peak, close under 10,000 feet, in January. They agree well with specimens in Lord Walden's collection.

Above pale umber-brown, a white supercilium extends to over the ear-coverts. Lores and ear-coverts dark umber. A white patch under eye, and white on chin extending down centre of throat to upper breast, very narrowly defined in some birds; side of throat first mottled with umber passing into two indistinct streaks on either side. Breast pale rufous-brown above, white below to abdomen. Under tail-coverts pure white. Flanks rusty; no rufous inside wing, which is all grey.

L. 9.0", W. 5.0", T. 3.6", t. 1.2", Bf. 0.7".

A nest of *Pycnonotus pygæus*, Hodg., brought in by my shikari at Shillong in June, contained 3 eggs of a pale madder ground, spotted and speckled with darker madder-brown, pale neutral grey, and a few dark brown spots,—all pretty evenly distributed.



The nest is 4 inches across, neatly made with a foundation of dry old leaves and broad blades of grass; the sides of thin stalks of a thistle and thin sticks, and lined within with very fine grass; taken in a low tree.

*Spizixos canifrons* breeds in the neighbourhood of Shillong, in May. Young birds are seen in June.

*Enicurus nigrifrons* of 1st List, Vol. XXXIX., Pt. II., p. 107, is *E. maculatus*, Vigors, in immature plumage.

584 of same list is, I find, *guttatus*, Gould, in which the white markings on the back are all circular, this would appear to replace *maculatus* in all these Eastern Hills, for I have never yet shot a specimen, like this last north-west form.

Up to March, when we left Manipur, I did not observe any Parrots or Hornbills in any part of the valley, or hills bounding it. The natives say that later in the season parrots are very numerous and do considerable injury to the crops. Of Swifts I saw only one, a large species, which I failed to secure. *Cypselus infumatus*, Selater, occurred in the Naga villages, and was very numerous in the large one of Padhang. *Pnoepyga* must be rare, for I did not get a single skin anywhere in N. E. Manipur. The country gets much drier on that side and the forest less dense, with a good deal of grass. Buntings were very plentiful and *Emberiza pusilla* appeared everywhere to be the commonest bird in the Naga Hills, at 3—5,000 feet.

In the pine forest that covers the slopes of the hills descending into the Umiam valley, one of my men marked a nest on June 25th; I proceeded to the spot soon after I had heard of it, and on coming up to the tree, a pine, saw the female fly off out of the head of it. But the nest was so well hidden by the boughs of the fir, that it was quite invisible from below. The bird after a short time came back, and I then saw it was *Sibia gracilis*, but was very shy and seeing us went off again, and hung about the trees at a distance of some 50 yards; while thus waiting, some 4 or 5 others were also seen. The female, however, would not venture back, and I sent one of my Goorkhas up, to cut off the head of the fir, nest and all, first taking out the eggs.\* It contained three of a pale sea-green, with ash-brown streakings and blotchings all over.

The nest was constructed of dry grass, moss, and rootlets, and the green spinules of the fir were worked into it, fixing it most firmly in its place in the crown of the pine, where it was much forked.

*Sibia* has habits very like *Phyllornis*: they hang about the outer branches much in the same manner, and there is again a certain likeness in general coloration between *S. gracilis* and *Otocomptsa jacosa* barring the colored under tail-coverts of the last. However, in *Sibia* the form of

\* This nest is in the Indian Museum.





nostril is very different. I have heard *gracilis* rather noisy in the spring, uttering a loud single note, repeated three or four times in succession.

453a. *Phyllornis Cochinchinensis.*

Of 2nd List is *P. chlorocephalus*, Walden; I obtained another pair at Dimapur, on the Dunsiri River, in December.

It was described by Lord Walden from Burmah; its extreme known western range is, therefore, now the Garo Hills.

*Trochalopteron Austeni*, Jerdon.

Was bagged again near the eastern extension of the main water-shed, on Kopamedza Peak, at the same altitude as before. It has been beautifully figured by Gould in the 'Birds of Asia,' Plate 187.

*Explanation of the Plates.*

- Pl. IV. *Sitta Nagaensis*, Godwin-Austen, p. 157.  
 Pl. V. *Malacocircus (Layardia) robiginosus*, Godwin-Austen, p. 164.  
 Pl. VI. *Garrulax albosuperciliaris*, Godwin-Austen, p. 161.  
 Pl. VII. *Sibia pulchella*, Godwin-Austen, p. 164.  
 Pl. VIII. *Turdinus Garoensis*, n. sp., p. 160.  
 Pl. IX. Fig. 1. *Cisticola Munipurensis*, Godwin-Austen, p. 165.  
 ——— Fig. 2. *Prinia rufula*, Godwin-Austen, p. 165.  
 Pl. X. Fig. 1. *Cisticola melanocephala*, And., p. 165.  
 ——— Fig. 2. *Cisticola schænicola*, Bonap., p. 165.



DESCRIPTIONS OF A FEW INDIAN PLANTS.—By S. KURZ.

(Received Nov. 1st, 1874.)

1. *MILIUSA TRISTIS*, Kurz in Journ. As. Soc. Beng., 1874, 58.

Arbor novellis fulvo-puberulis; folia ampla, oblonga, petiolo 1-2 lin. longo puberulo suffulta, abrupte acuminata, basi acuta et subobliqua, chartacea, glabra v. subtus secus reticulationem laxam parce puberula; flores solitarii, axillares et oppositifolii, pedicellis  $\frac{1}{2}$  pollicaribus fulvo-pubescentibus unibracteatis; calyx corollaque appresse fulvo-pubescentes; sepala ovato-subulata, c. 2 lin. longa; petala exteriora duplo longiora, lanceolata, acuminata, interiora  $\frac{1}{4}$ -1 poll. longa, oblonga, obtusiuscula.—*Ava*.

2. *MITREPHORA VANDEFLORA*, Kurz in Journ. As. Soc. Beng., 1874, 57.

Arbor decidua, novellis ramulisque pubescentibus; folia oblonga v. ovato-oblonga ad elliptica, 5-6 poll. longa, petiolo brevi puberulo, basi rotundata v. acuta, chartacea v. subcoriacea, acuminata v. acuta, v. utrinque minute puberula v. supra nitida et subtus secus nervos minute puberula; flores plus quam poll. in diametro, pedicellis poll. longis sursum incrassatis fulvo-tomentosis sub calycis basi bractea semi-amplexicauli rotundata vestitis suffulti et vulgo 2-ni v. plures e pedunculis reductis lateralibus crassis squamatis erumpentes; sepala rotundata, dense fulvo-pubescentia; petala 3 exteriora lineari-oblonga, undulata, extus parce fulvo-pubescentia, flava v. flava et rubescenti-striata, interiora ungui brevi et lato, conniventia, extus puberula, secus margines tomentosa, flava, apice albo- et rubro-punctata.—*Pegu; Martaban*.

N. B. *Melodorum parviflorum*, Scheffer = *M. latifolium*, Hf. and Th.; *Melod. Bancanum*, ejusd. = *M. manubriatum*, Hf. and Th.

3. *CAPPARIS SIKKIMENSIS*, sp. nov.

Frutex scandens, habitu *C. Roxburghii*, novellis parce pubescentibus, mox glaber; folia elliptica ad elliptico-ovata, basi subacuta, obtusiuscula, petiolo gracili parce appresse pubescente  $\frac{1}{2}$ - $\frac{3}{4}$  poll. longo suffulta, 2-3 poll. longa, coriacea, glabra; flores mediocres, pedicellis poll. circiter longis appresse pubescentibus suffulti, umbellati; pedunculi 1-1 $\frac{1}{4}$  poll. longi, parce appresse pubescentes, compressiusculi, ex foliorum superiorum axillis erumpentes et saepius in paniculam terminalem dispositi; sepala concavo-ovali-rotundata, minute puberula et secus margines hyalinos tomentella,  $\frac{1}{2}$  poll. longa; petala intus lanata, extus glabra; ovarium ovoideum, acutum, et gynophorum 1 $\frac{1}{2}$ -2 poll. longum glabra.—*Sikkim-Himalaya*, 4000-5000 ped. s. m.

4. *SCHIMA MONTICOLA*, Kurz in Journ. As. Soc. Beng., 1874, 90.

Arbor glabra, gemmis sericeo-pubescentibus, ramulis parce lenticellatis; folia oblonga v. elliptico-oblonga, basi rotundata v. obtusa, 3-4 poll.



longa, petiolo  $\frac{1}{2}$ - $\frac{3}{4}$  pollicari lato suffulta, acuta v. subobtusâ, grosse crenato-serrata, valde coriacea, supra nitida, glabra, reticulatione indistinctâ impressâ; capsulæ depresso-globosæ, pedunculo crasso lenticellato  $1\frac{1}{2}$  poll. longo suffultæ.—*Martabania*.

5. *PTEROSPERMUM CINNAMOMEUM*, Kurz in Journ. As. Soc. Beng., 1874, 120.

Arbor, novellis ferrugineo-tomentosis; folia oblique oblonga ad ovato-oblonga, basi uno latere inæquali-cordata v. rotundata, altero acuta, petiolo crasso 1-2 lin. longo tomentoso suffulta,  $2\frac{1}{2}$ -5 lin. longa, acuminata v. cuspidata, chartacea, supra glabra et nitentia, subtus dense fulvo- v. cinnamomeo-raro canescenti-tomentosa; stipulæ subulatæ, usque ad poll. longæ, simplices v. frequentius basi appendice cucullatâ auctæ; flores magni, albi, pedunculis  $\frac{1}{2}$ -1 poll. longis fulvo-floccoso-tomentosis suffulti, solitarii, axillares; bracteolæ subulatæ basi cucullato-appendiculatæ; sepala c.  $1\frac{1}{2}$  poll. longa v. paullo longiora, linearia, extus 3-nervia et fulvo-tomentosa, intus subglabra; filamenta et stylus glaber; ovarium dense fulvo-villosum; capsulæ oblongæ, obtuse 5-gonæ, utrinque attenuatæ, lignosæ, 2 poll. longæ, fugacissime ferrugineo- v. fulvo-tomentosæ.—*Martaban; Tenasserim*.

6. *ELEOCARPUS SIMPLEX*, Kurz in Journ. As. Soc. Beng., 1874, 132.

Arbor gemmis parce sericeo-puberulis; folia oblonga v. oblongo-lanceolata, petiolo pollicari glabro geniculato-incrassato suffulta, basi obtusa, 5-6 poll. longa, obtusa v. obtusiuscule acuminata, chartacea, crenato-dentata, glabra; flores majusculi, pedicellis poll. longis v. longioribus glabris, in racemos laxos axillares sub anthesi ebracteatos foliis breviores dispositi; sepala c. 6 lin. longa, lineari-lanceolata, acuminata, glabra, intus secus marginem angustum velutina; petala æquilonga, lato-cuneata, vulgo bifida, lobis sectis et valde fimbriatis, extus parce sericea, intus basin versus sericea, villosa; antheræ glabræ; ovarium argenteo-tomentosum. *Tenasserim*.

7. *ELEOCARPUS LITTORALIS*, T. and B. ap. Kurz in Journ. As. Soc. Beng., 1874, 132.

Arbor glabra; folia obovato-oblonga, in petiolum gracilem  $\frac{1}{2}$ -1 poll. longum continuum attenuata, 3-5 poll. longa, repando-serrata, obtusa, valde coriacea, glabra, supra nitentia; flores majusculi, pedicellis pollicaribus parce puberis, in racemos axillares puberos foliis paullo brevioribus collecti; sepala lineari-lanceolata, 6-7 lin. longa, canescenti-velutina; petala æquilonga, cuneato-oblonga, extus dorso sericeo-pubescentia, secta et fimbriata; antheræ puberulæ; ovarium fulvo-villosum; drupæ c. pollicem longæ, oblongæ, læves, putamine valde lacunoso-tuberculato compressiusculo. *Tenasserim*.



8. *E. HYGROPHILUS*, Kurz in Journ. As. Soc. Beng., 1874, 133.

Arbor gemmis argenteo-sericeis; folia obovato-ad cuneato-oblonga, petiolo  $\frac{1}{4}$ - $\frac{1}{2}$  pollicari glabro geniculato-incrassato suffulta, basi attenuata, 2-3 poll. longa, obtusa v. rotundata, crenato-serrata, chartacea, glabra; flores parvi, pedicellis  $2\frac{1}{2}$ -3 lin. longis parce argenteo-sericeis, racemos argenteo-sericeos glabrescentes axillares foliorum longitudine v. breviores efficientes; sepala 3 lin. longa, lanceolata, acuta, sericea, glabrescentia; petala paullo longiora, lato-cuneata, usque ad mediam partem fimbriata, glabra; antheræ puberulæ; ovarium sericeo-tomentosum.—*Pegu; Martaban; Tenasserim.*

N. B. *Elæocarpus Aconodia*, Mast. species est valde diversa et nequaquam cum *Aconodia punctata*, Bl. conjungenda. *E. punctatus*, Masters, *Parinari* est species; *E. glabrescens*, Mast. = *E. Jackiana*, Wall. (*Monocera ferruginea*, Jack.); *E. pedunculatus*, Wall = *E. Palembanicus*, Miq.

9. *MELIA BIRMANICA*, nov. sp.

Arbor novellis canescenti v. flavescenti furfuraceo-tomentosis; folia bipinnata, petiolo longo et tereti, pinnis 5-3-paribus; foliola ovata v. ovato-lanceolata, basi rotundata v. acuta, sæpius sub-inaequalia,  $1\frac{1}{2}$ -2 poll. longa, breviter acuminata, integra, petiolulis brevibus gracilibus vulgo puberulis suffulta; flores virescenti-albi, parviusculi, pedicellis brevissimis furfuraceo-tomentosi v. subsessiles, in paniculas flavescenti- v. canescenti-furfuraceo-tomentosas corymbiformes axillares folio breviores dispositi; calyx profunde 5-fidus, lobis oblongo-lanceolatis acutis farinaceo-puberulis; petala c. 3 lin. longa, extus velutina, intus dense puberula; tubus stamineus c. 2 lin. tantum longus, albus, intus pilosus et apice inter antheras valde lanata; drupæ globosæ v. subglobosæ, c. 1 poll. crassæ v. crassiores, flavescens, læves, putamine obtuse 5-8-angulari et 5-8-loculari globoso.—*Martaban.*

10. *SCHMIEDELIA CHARTACEA*, nov. sp.

Frutex novellis appresse puberulis; folia uni-foliata, petiolo 1-1 $\frac{1}{2}$  pollicari utrinque incrassato suffulta, oblonga ad oblongo-lanceolata, brevissime petiolulata, basi acuta, grosse et remote repando-serrata,  $\frac{1}{2}$ -1 $\frac{1}{4}$  ped. longa, chartacea, acuminata, glabra; flores parvi, fasciculati, pedicellis capillaribus  $\frac{1}{4}$ - $\frac{1}{2}$  lin. longis suffulti et racemos graciles axillares folio breviores formantes; sepala  $\frac{1}{2}$  lin. longa, concavo-rotundata, parce ciliolata; baccæ solitariae raro binæ, pisi majoris magnitudine, læves, coccineæ.—*Sikkim.*

N. B. Fructus *N. hypoleuci*, Ky. in diario hocce (1871, 50) ad *N. lappaceum* probabiliter referendi sunt; fructus veri *N. hypoleuci*, a me nuper in Martabania collecti, iis *Euphorie Litchi* simillimi.



11. *ASPIDOPTERYS HELFERIANA*, Kurz in Journ. As. Soc. Beng. 1874, 137.

Frutex scandens, novellis appresse fulvo-pubescentibus; folia orbiculari-ovata ad lato-obovalia, breviter cuspidata v. apiculata, petiolo  $\frac{1}{2}$ - $\frac{3}{4}$  pollicari pubescente glabrescente suffulta, 3-5 poll. longa, vulgo glaucoviridia; flores parvi, glabri, pedicellis c. 2 lin. longis glabris filiformibus, paniculam axillarem et terminalem laxam dum juvenilem ferrugineo-pubescentem mox glabrescentem formantes; petala c. 2 lin. longa; ovarium glaberrimum; gynobasis decidua; disci lobi vix rugosi; samaræ ovoideæ, pollicem circiter longæ, apice attenuato retusæ, hyalino-membranaceæ, pallide brunneæ, radiato-nervosæ, alato-cristatæ, glabræ.—*Tenasserim*.

12. *INDIGOFERA DEBILIS*, Grab. in Wall., Cat., 5466.

Herba annua v. perennis,  $1\frac{1}{2}$ -2-pedalis, sparse appresse hirsuta; stipulæ lineari-subulatæ, 3-4 lin. longæ; folia impari-pinnata, subsessilia, 1- $1\frac{1}{2}$  poll. longa; foliola 1-2-juga cum impari longius petiolulato, alterna, rhomboideo-obovata ad sub lanceolata, brevissime petiolulata, basi subcuneato-attenuata, obtusiuscula et mucronata v. acuta,  $\frac{1}{2}$ -1 poll. longa, integra, membranacea, supra glabra, subtus tenuissime appresse pubescentia; flores minimi, brevissime pedicellati, bractea persistente subulatâ lineam longâ muniti, in racemum gracillimum parce pubescentem v. glabrum multiflorum axillarem folio multo longiorem digesti; calyx lin. longus, parce appresse pilosus, dentibus subulato-filiformibus; corolla paullo longior; legumina linearia, subcylindrica cum suturis pallide coloratis prominentibus, c.  $\frac{1}{2}$  poll. longa, oblique acuminata, brunnea, parce appresse hirsuta, 5-6-sperma; semina cylindrico-oblonga, utrinque truncata.—*I. viscosæ* affinis.—*Ava*.

13. *DESMODIUM (PHYLLODIUM) GRANDE*, nov. sp.

Frutex erectus, ramulis molliter fulvo-tomentellis; stipulæ et stipellæ strictæ, breves, lineares, subulato-acuminatæ; folia pinnato-3 v. raro 1-foliata, petiolo  $\frac{1}{2}$ -1 pollicari fulvo-tomentoso suffulta; foliola 3-5 poll. longa, breviter petiolulata, ovata v. sub-ovata, longiuscule et obtusiuscule acuminata cum mucrone, integra, chartacea, supra puberula, subtus molliter sub-fulvo-pubescentia; flores...in racemos foliatos axillares et terminales digesti et paniculam terminalem efformantes; rhachis fulvo-tomentosa; folia floralia bifoliolata, petiolo 2-3 lin. longo tomentoso in aristam longam desinente suffulta; foliola oblique ovalia ad suborbicularia, retusa v. rotundata cum mucrone, puberula, pollicem circiter longa; legumina 2-3 articulata, tomentoso-pubescentia, iis *D. pulchelli* duplo majora.—*D. vestito* affine.—*Ava*.

N. B. Flores *Lespedezæ pinetorum* nec cyanei nec rosei, ut in diario hocce 1873, 231 descripti, sed flavescentes carinâ apice rosellâ.





**PUERARIA BRACHYCARPA**, Kurz in Journ. As. Soc. Beng., 1873, 232.

Herba perennis diffusa v. volubilis, ramis acute angularibus 2-4-pedali-bus, secus angulos retrorse appresse hirsuta; stipulae lanceolatae, acumina-tae, parvae; folia pinnato-3-foliolata, petiolo secus angulos retrorse appresse pubescente 1-1½ pollicari suffulta; foliola ovata ad ovato-lanceolata (latera-lia valde obliqua), breviter petiolulata, acuminata, 1½-2½ poll. longa, charta-cea, utrinque parce appresse hirsuta; flores desunt, racemos solitarios v. raro geminos strictos canescenti-pubescentes axillares formantes; bractea minutae, subulatæ, persistentes; pedicelli sub fructu lin. circiter longi; calyx appresse pubescens, lineam fere longus, lobis acutis; legumina lineari-oblonga, torosa, compressa, pollicaria v. paullo longiora, 2½ lin. lata, pallida, parce appresse hirsutula, 5-6-sperma; semina transverse ovoidea, 2 lin. lata, olivacea.—*Pegu*.

N. B. *Phaseolus lucens*, Wall., *Ph. dolichoides*, Roxb., et *Ph. gran-dis*, Wall. apud Benth. Pl. Jungh. I 239 in adnot. endocarpio secedente dein semina arcte includente (quamobrem beat. Roxburghius semina arillata descripsit) gaudent et a me ad *Canavaliæ* reducuntur.

15. **VIGNA BRACHYCARPA**, nov. sp.

Herba perennis, volubilis, habitu *V. vexillatae*, caulibus filiformibus 3-4 ped. longis parce hirsutis; stipulae peltato-lineari-oblongae, 3-4 lin. longae; folia pinnato-3-foliolata, petiolo gracili 1-1½ poll. longo hirsuto suffulta; foliola deltoideo-lanceolata ad linearia (lateralia vulgo inæqualia), breviter petiolulata, acuminata, 1-2 poll. longa, chartacea, utrinque parce hirsuta; flores minores, flavi, brevissime pedicellati, pauci, pedunculum gracilem parce hirsutum axillarem petiolis longiorem v. æquilongum terminantes; calyx amplus, 1½ lin. tantum altus, glaber, dentibus latis, acutis, brevibus; corolla c. ½ poll. longa; legumina lineari-oblonga, stricta, utrinque obtusiuscula, usque ad pollicem longa, 2½ lin. lata, compressa, nigrescentia, sparse sed longe hirsuta, polysperma; semina crassa, sub-4-gona, lin. lata et longa, opaca, nigra.—*Arracan*.

N. B. *Dolichos Gangeticus*, Roxb., generi *Vignæ* adnumerandus est.

16. **DUNBARIA PODOCARPA**, nov. sp.

Herba perennis, volubilis, flavescenti puberula; folia pinnato-3-foliola-ta, petiolo flavescenti pubescenti ½-1 pollicari instructa; foliola lato-ovata (lateralia obliqua), petiolulis brevibus pubescentibus suffulta, acuminata, utrinque (imprimis subtus) puberula, subtus pallida, lutescentia, aurantiaco- v. luteo-resinosa; flores mediocres, pedicellis 2 lin. longis pubescentibus vulgo bini pedunculo brevissimo appresse fulvo-pubescenti axillari instructi; calyx c. 3 lin. altus, appresse flavo-pubescentis, dentibus lanceolatis: ovarium stipi-tatum, appresse pubescens; legumina stipite 3-5 lin. longo suffulta, lineari-



lanceolata, plana et vix torosa, acuminata,  $1\frac{1}{2}$ -2 poll. longa, 4 lin. lata, puberula, pleiosperma; semina latiora quam longa, compressa, c. 2 lin. lata, nigra.—*Tenasserim*.

N. B. *Phascolus fuscus*, Wall. *Dunbariis* est adnumerandus.

17. *ATYLOSIA CANDICANS*, (*Cajanus ? candicans*, Wall., Cat., 5576 et 5567).

Herba perennis, erecta, molliter albido-tomentella; folia pinnato-3-foliolata, petiolo  $1-1\frac{1}{2}$  pollicari pubescenti instructa; foliola lato-ovata (lateralia obliqua), obtusiuscula v. obtusiuscule acuminata, 1-2 poll. longa, basi subcordata, utrinque pubescentia, subtus albida; flores mediocres, pedicellis 2-3-lin. longis albo-pubescentibus, racemum albo-tomentosum axillarem folio breviorum efformantes; calyx fere 5 lin. longus, albo-pilosus, usque ad basin fere 5-fidus, lobis linearibus, acuminatis; corolla calycis lobis paullo longior; legumina transverse impressa et torosa, dense pilosa.—*Ava*.

N. B. *Dunbaria calycina*, Miq., *Atylosia* est species. *Dolichos tomentosus*, Roth (*D. bracteatus*, Wall., Cat., 554) *Rhynchosia* a me adnumeratur.

18. *FLEMINGIA SERICANS*, nov. sp. (*F. nana*, Wall., Cat., 5747. B. non Roxb.).

Herba perennis, 2-2 $\frac{1}{2}$ -pedalis, caulibus angulatis canescenti-pubescentibus; folia digitato-3-foliolata, petiolo crasso 3-angulati anguste alato  $\frac{3}{4}$ -1 poll. longo suffulta; foliola magis minusve rhomboideo-ovato-lanceolata (lateralia obliqua), breviter petiolulata, obtusiuscula cum mucrone v. acuta, 2-3 poll. longa, utrinque molliter puberula, supra velutina, subtus sparse nigro-resinoso-punctata; flores parvi, purpurascens, pedicellis lin. longis v. subsessiles, racemos breviores v. longiores argenteo-sericeos solitarios v. fasciculatos axillares efficientes; bractea parva, ovata, sericea, valde decidua; calyx argenteo-sericeus, 2 $\frac{1}{2}$ -3 lin. longus, lobis lineari-subulatis, infimo longissimo; corolla glabra, paullo longior; legumina ovoideo-oblonga, puberula, vix sparse coccineo-resinoso-punctata, vulgo 2-sperma.—*Prome; Martaban*.

19. *MUCUNA BIPPLICATA*, Teysman et Binnendyk, Cat. Hort. Bog., 1866, 261.

Legumen oblongum, sessile, c. 3-4 poll. longum, 1-3-spermum, utrinque bialatum, transverse plicatum, plicis duplici serie digestis apice horizontali chartaceo explanatis.—*Insula Borneo*.—Legumina vetusta tantum exstant, sed species distinctissima haud cum *M. anguina*, Wall. (= *M. monosperma*, Roxb.) conjungenda (cf Scheffer Obs. phyt. 91).





20. *MUCUNA MOLLISSIMA*, Teysman and Binnendyk, Cat. Hort. Bog., 1866, 261.

Frutex scandens, molliter pubescens; folia pinnatim 3-foliolata, petiolo piloso  $1\frac{1}{2}$ - $2\frac{1}{2}$  pollicari suffulta; foliola rhomboideo-ovata, (lateralia valde obliqua), petiolulis 1-2 lin. longis pubescentibus instructa, obtusa cum mucrone v. acutiuscula, membranacea, 2-3 poll. longa, molliter pubescentia; stipellæ subulatæ, lin. longæ; flores mediocres, pedicellis 4-5 lin. longis pubescentibus, racemum longiuscule (1-2 poll. longum) pedunculatum pubescentem folio breviorum axillarem formantes; calyx velutinus cum setis fulvis urentibus interspersus, amplius,  $\frac{1}{2}$  poll. in diametro, dentibus 3 inferioribus triangulari-acutis, superioribus 2 connatis bi-denticulatis; corolla poll. longa, vexillo obovato-oblongo, breviter unguiculato alis longitudine æquans, carina paullo longior; legumina oblonga, 3-4 poll. longa, 5-6-sperma, brevissime stipitata, subvelutina et setis rigidis fulvis fragilibus deciduis obteeta, utrinque in alas 2 undulatas expansa, transverse et valde oblique simpliciter plicata, plicis magis minusve revolutis; semina lato-elliptica, plana,  $\frac{1}{2}$  circiter longa, nigra.—*Molluccos, Halmahaira*, in horto Bogoriensi culta.

21. *PTEROCARPUS MACROCARPUS*, nov. sp.

Arbor, novellis fulvo-pubescentibus, folia impari-pinnata,  $\frac{1}{2}$ - $\frac{3}{4}$  pedes longa, rachis fulvo-puberula; foliola ovata ad oblonga, 3-5-juga, alterna, petiolulo 1-2 lin. longo ferrugineo-pubescente suffulta, breviter et obtusiuscule acuminata, mucronata,  $1\frac{1}{2}$ - $2\frac{1}{2}$  longa, integra, coriacea, novella subtus fulvo-pubescentia, glabrescentia et secus nervos puberula; flores mediocres, flavi, pedicellis 3-4 lin. longis fulvo-pubescentibus; in racemos simplices fulvo-pubescentes axillares digesti; calyx dense ferrugineo-velutinus, c. 3 lin. longus, basi sub-oblique attenuatus; corolla ultra 3 lin. longa, petalis undulato-crispatis; stamina diadelpchia; ovarium villosum; legumina canescentia v. fulvescenti-velutina, irregulari-orbicularia, alis subplicatis  $1\frac{1}{2}$ -2 poll. in diametro, basi inæquali sinuato-rotundata, acumine styloso minuto supra sinu basali protrudente.—*Martaban; Tenasserim.*

22. *COMBRETUM DASYSTACHYUM*, nov. sp.

Frutex scandens, habitu *C. Chinensis* sed partes omnes magis minusve pubescentes; folia opposita v. sæpius ternata, elliptico-ad obovato-oblonga, petiolo brevissimo crasso fulvo- v. ferrugineo-pubescente suffulta, acuminata, integra, 3-4 poll. longa, membranacea, supra sparse albo-puncticulata, subtus (secus nervos dense) pubescentia; flores parvi, albidii, sessiles, spicas satis robustas strictas patentes v. decurvas dense ferrugineo-tomentosas axillares folio breviores efformantes; calyx tubuloso-campanulatus; limbus 4-lobatus, intus dense fulvo-hispidus; petala lato-oblonga, cuneato-unguiculata, calycis



lobis longiora ; ovarium mox glabrescens, obsolete 4-gonum ; fructus oblongi,  $1\frac{1}{2}$  poll. fere longi, pollicem lati, glabri, 4-alati, alis chartaceis semi-oblongis nucis diametro multo latioribus.—*Pegu ; Martaban.*—*C. Chinensi*, Roxb. (*C. Griffithii*, Heurck and Muell-Arg. Obs. Bot. Plant. nov. 231) valde affine.

23. COMBRETUM PYRIFOLIUM, (*Pentaptera pyrifolia*, Wall., Cat., 3985 non Presl.).

Frutex scandens, habitu *C. ovalifolii*, novellis ferrugineo-puberulis ; folia parva, ovalia ad lato-oblonga et suborbicularia, opposita v. alterna, petiolo 3-4 lin. longo gracili suffulta, obtusa v. subretusa et mucronata, integra, chartacea,  $1\frac{1}{2}$ -2 poll. longa, glabra, supra puncticulata ; flores .. ; spicæ puberulæ, solitariae v. in paniculas graciles axillares v. breves terminales digestæ ; fructus parviusculi,  $\frac{1}{2}$ - $\frac{3}{4}$  poll. longi, glabri, 5-4-alati, alis chartaceis semi-ovalibus nucis diametro latioribus.—*Ava*.

24. COMBRETUM QUADRANGULARE, nov. sp.

Frutex subscandens, argenteo-lepidotus et punctatus, ramulis acute 4-angularibus ; folia opposita v. raro alterna, parva, obovato-cuneata v. raro ovata, petiolo brevi gracili lepidoto suffulta, valgo obtusa v. subretusa et mucronata, integra,  $1\frac{1}{2}$ -3 poll. longa, chartacea, utrinque (subtus sub-dense) argenteo-lepidota et punctata ; flores parvi, albi ?, bracteâ subulatâ fugacissimâ substructi, spicas solitarias v. binas simplices dense lepidotas axillares folio breviores formantes ; calyx infundibuliformis, vix lin. longus, dense lepidotus, limbo 4-dentato intus dense fulvo-villoso ; petala calycis dentibus 3-angularibus paullo longiora, obovata ; stamina exserta ; fructus parvi,  $\frac{1}{2}$ - $\frac{3}{4}$  poll. longi et lati, suborbiculares, dense argenteo-lepidoti, 4-alati, alis chartaceis, nucis diametro latioribus.—*Tenasserim ; Siam*.

N. B. *C. platyphyllum*, v. Heurck et Muell-Arg. Obs. Bot. Plant. Nov. 242 = *C. extensum*, Roxb. ; *Anogeissus phillyreæfolia*, v. Heurck et Muell. Arg. l. c. 219. = *A. acuminatæ* varietas.

25. LONICERA LELANTHA, nov. sp.

Frutex glaber ; folia ovata ad ovato-oblonga, basi acutâ decurrentia, petiolo 3-4 lin. longo suffulta, obtusiuscula, subcoriacea, 2-3 poll. longa, lævia, glabra, supra nitida ; flores magni,  $2\frac{1}{2}$ -2 poll. longi, glaberrimi, sessiles, bini v. solitarii pedunculo crasso stricto 3-4 lin. longo axillari suffulti ; calycis tubus 3 lin. fere longus, lævis, limbo ample-infundibuliformi lin. fere longo leviter 4-dentato.—*Ava montes.*—*L. longifloræ*, DC. affinis.

26. RUBIA SIKKIMENSIS, nov. sp.

Herba perennis *R. cordifoliæ* arete affinis, aculeolato-scabra, caulibus anguste alato-angulatis ; folia sessilia v. subsessilia, 4na v. sursum 3na



verticillata, lanceolata ad elliptico-lanceolata, 3-5-nervia, acuminata, basi obtusa, imprimis secus nervos et margines retrorse aculeolata, 2-4 poll. longa, chartacea; flores minuti, pedicellis semilineam longis suffulti, cymosuli, paniculas brachiatas axillares in paniculam majorem terminalem collectas formantes; baccæ didymæ v. globosæ, pisi minimi magnitudine, glabræ, succulentæ.—*Sikkim-Himalaya.*

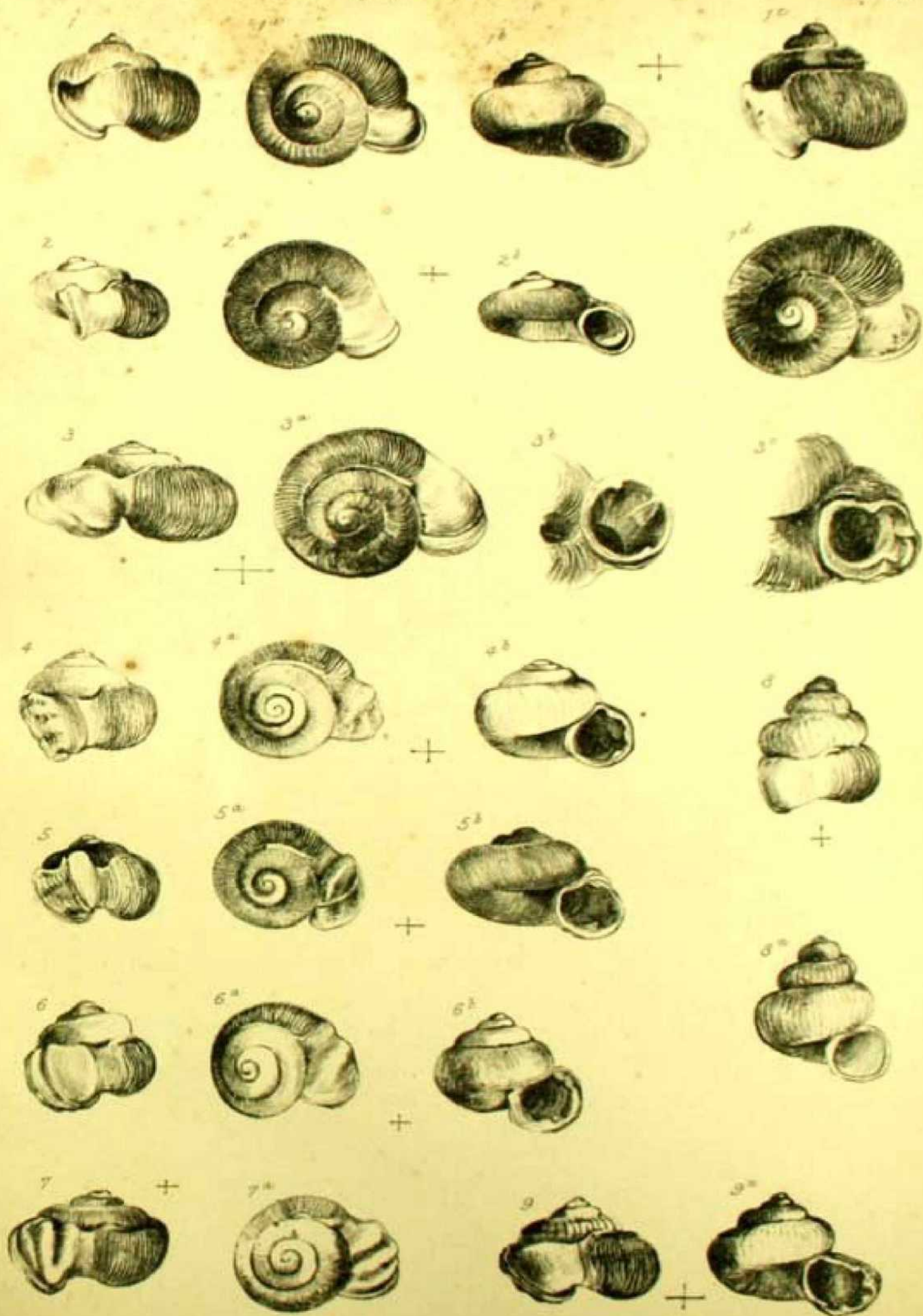
N. B.—*Psilobium capillare*, Kurz in Journ. As. Soc. Beng., 1872, 313 = *Morindopsis capillaris*.

27. ARNEBIA TIBETANA, nov. sp.

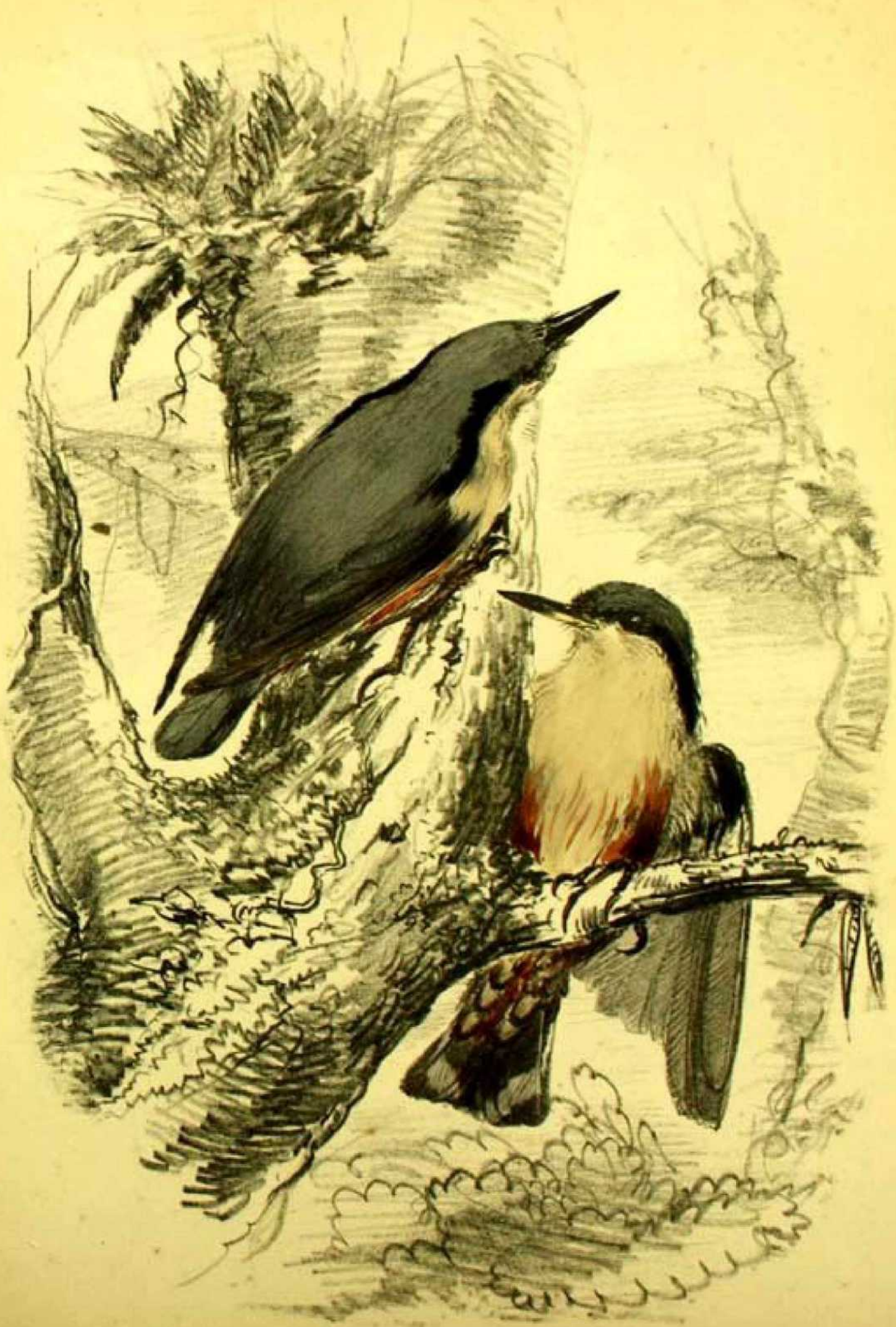
Herba perennis magis minusve ramosa usque ad semipedem alta, appresse hispida (pilis rigidis albidis e tuberculis albis ortis); folia obovato-lineararia ad linearia-oblonga et linearia, radicalia in petiolum longiorem v. breviorum decurrentia, caulina sessilia, obtusa v. obtusiuscula, crasse membranacea, appresse albo-hispida  $\frac{1}{2}$ -1 $\frac{1}{2}$  poll. longa; flores verosimiliter flavi, sessiles, in spicas longiores v. breviores circinnatas terminales et laterales congesti et sæpius in paniculam spuriam albo-hirsutam collecti; bracteæ calyce breviores, albo-hispidæ, lineares, obtusæ; calyx albo-setosus, usque ad basin fere 5-partitus, segmentis 2 lin. circiter longis v. longioribus anguste linearibus; corolla infundibuliformi-hypocraterimorpha, c.  $\frac{1}{2}$  poll. longa, lobis brevibus rotundatis; antheræ fauci inserta; nubes grisæ, 3-angulari-ovatæ, acutæ, tuberculatæ, lineam fere longæ, dorso obtuse carinatæ. *Tibetia occidentalis*, 12000-16000 p. s. m.

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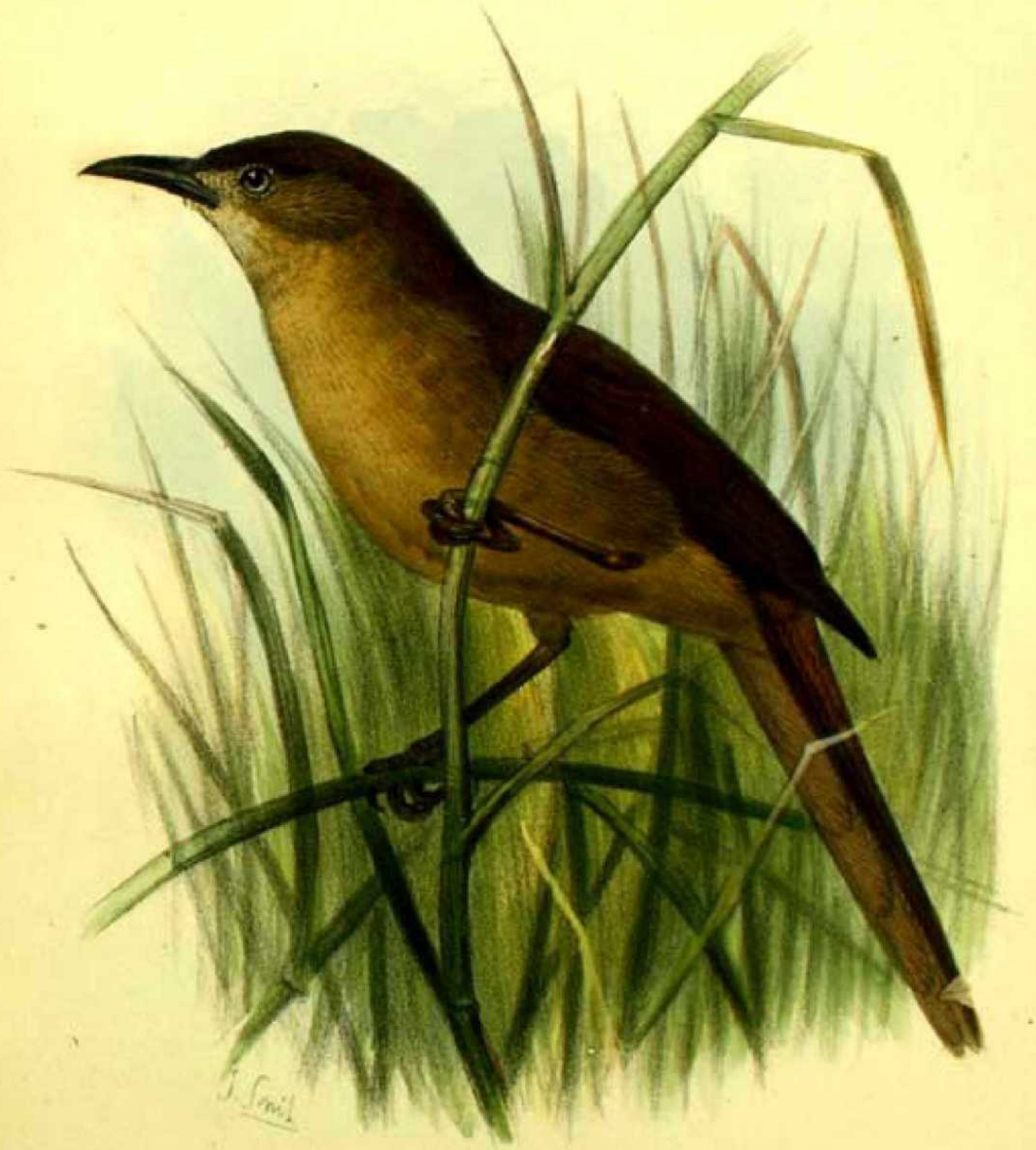












J. Smith. lith.

M&K Hanhart. imp.

LAYARDIA ROBINOSA.



GOODE & BEST, Journ. Asiat. Soc. Bengal, 1874.

Pl. VI.



GARRULAX ALBOSUPERCILLARIS.

Goode & Best, del.

MacLure & Macdonald, imp.





SIBIA PULCHELLA.



TURDINUS GAROENSIS





Oodwin Austin, del.

1. CISTICOLA MUNIPURENSIS Nat. Size  
2. PRINIA RUFULA

Machere & Macdonald imp.





AC  
1874.

Godwin Austen, del.

1. CISTICOLA MELANOCEPHALA. Nat Size.  
2. " SCHENICOLA "

Machre & Mansel sold 1899.





# JOURNAL OF THE ASIATIC SOCIETY.

Part II.—PHYSICAL SCIENCE, &c.

No. IV.—1874.

ENUMERATION OF BURMESE PALMS.—By S. KURZ.

(Received Oct. 12, read Dec. 3, 1873.)

(With Plates XII—XXXI.)

In working up my Burmese palms, I find that a few of them are new. I now propose to describe these and to give at the same time an enumeration of all the species that have hitherto been found in Burma, adding also a conspectus so as to facilitate their identification. The rattans, however, are in such a state of confusion that little can be done until the material for description becomes more complete and the almost inextricable synonymy of the described species has been properly cleared up.

I have not paid special attention to palms in the field, but a few remarks on variation may not be out of place here.

The size of the palms is often enough variable and, amongst the many examples, I shall mention only *Phoenix paludosa*, the stem of which varies in height from only 2 or 3 ft. up to 15 to 25 ft. Sobolification is a character of little value in my eyes. I look upon it rather as an idiosyncrasy, and, therefore, not even as a sufficient character on which to establish a variety. No doubt in very many species this character has become general and constant, but atavisms are not unfrequent. We know, for example, cases in which the common betel-nut palm has made as many as 7 shoots, and similar examples are not wanting (especially in *Phoenix*, *Cocos*, *Arenga*, *Euterpe*). *Areca triandra* has simple and soboliferous trunks with all intermediate



states, and I have, therefore, unhesitatingly connected with it *A. laxa*, a species that differs in no structural points. *Caryota sobolifera* is another example wherein simple-stemmed and soboliferous plants may occasionally be found in the Burmese jungles not a dozen yards from one another. Species based upon such distinctions, if not also accompanied by structural differences, are in my opinion untenable, and grouping palm-species after such a character is simply misleading.

Again, the armature in *Calamus* would appear to me to be also subject to variation within certain limits. It certainly is often very different according to the age of the rattan itself, or accordingly as the sheaths come from the lower or upper parts of the plant. On the other hand, the *Calami* (including *Dæmonorops*) offer so many valuable characters in their spathes and spathules, nature of seeds, loræ and flagellæ, and, finally, in the scales and stamens, that we may confidently look forward to a sound and natural classification of the rattans so soon as the numerous book-species, often based upon incomplete pieces only, shall have been got rid of. The difference in the scales of the fruits of *Calamus* in different stages of growth is so far as possible illustrated in the present paper. The indument of the inflorescences and their spathes seems to afford valuable characters, especially to herbarium-botanists. The colour, however, of the same varies greatly in the same species, as for example in *A. gracilis*, in which some individuals have yellowish-white and bright scarlet *spadices*, while others have them greenish-purple.

Burmese palms are still very incompletely known, especially the rattans. While the distributional area of the leiocarpous palms is greater than one might have expected, that of the rattans is singularly restricted and limited. Thus I have been unable, in spite of all the pains I have taken, to identify several of my Burmese rattans with any of the 100 species or thereabouts already published. Only the more light-loving species, such as *C. Guruba*, *fasciculatus*, etc., have a wider distribution.

Burma and the Andamans contribute each a new type of *Calamus* in *C. tigrinus* and *C. Andamanicus*, which have the scales of their fruits furnished with fringed appendages as long as or longer than the scale itself.

I have, in the present paper, endeavoured to supplement my descriptions by the addition of figures, for it is irksome to recognise palms from descriptions only; a figure, moreover, allows considerably shortening of the description itself. The small size of the Society's Journal has, however, compelled me to introduce only the most important parts of these bulky plants.





*SYNOPSIS OF THE GENERA AND SPECIES OF BURMESE  
PALMS.*

SUBFAM. I. PALMÆ GENUINÆ.—Fruits not imbricate scaly, but smooth or variously rough or tubercled. Seeds without arillus. Usually erect, very rarely armed palms.

TRIB. I. NIPINÆ.—*Perianth of females reduced to a few scales. Ovaries 3, apocarpous. Male flowers in separate spadices surrounding the central female flower-head. Leaves pinnate.*

NIPA, *Rumph.*—Spathes many, sheathing, persistent. Female flowers on a central globular torus, surrounded by the male spadices. Male perianth 6-parted, complete, valvate in bud. Stamens united by threes. Drupes woody, angular-turbinate, collected into a large dense head. Albumen equable, hollow in centre. Soboliferous almost stemless palms.

*N. fruticans*, Wurm. Only species.

TRIB. II. PINNATÆ.—*Perianth complete in both sexes. Leaves pinnate twice pinnate or pinnatisect, rarely almost entire. Erect palms.*

\* Spathes 1 or 2, more or less boat- or spindle-shaped.

§ *Cocoinæ*.—Spathes 1 or 2, spindle-shaped or clavate. Ovary syncarpous. Putamen at base 3-porous. Leaves simply pinnate. (Probably better reduced again to a section of *Arecinæ*.)

Cocos, *L.*—Monoecious on the same spadix. Petals in females imbricate-convolute in bud. Ovary syncarpous, 3-celled, only one cell ovule-bearing. Drupe large, woody, containing a single one-seeded hard putamen. Albumen equable. Large simple-stemmed palms.

*Cocos nucifera*, *L.* Only species.

§ § *Arecinæ*.—Spathes 1 or 2, boat-shaped, caducous. Ovary syncarpous. Putamen not perforated. Pinnæ neither fascicled nor erose-toothed.

ARECA, *L.*—Flowers monoecious, their bases immersed in the cavities of the nude spadix. Stamens 3, 6, or numerous. Petals valvate in bud.



Albumen ruminat. Simple-stemmed or soboliferous palms. Pinnæ irregularly united into broader or narrower segments, rarely all connate in a 2-cleft blade.

### Species.

*Subg. 1. Areca, L.*—Stamens 6 or 3. Stigmas 3. Female flowers lateral between the ramifications, rarely axillary. Spadix often twice ramified, the ultimate ramifications usually more or less filiform and covered by male flowers only.

× Stamens 6. Female flowers without bract.

Simple-stemmed, glabrous; drupes as large as a hen's egg,

...*A. Catechu, L.*

× × Stamens 3. Female flowers without bract.

Glabrous, simple-stemmed or soboliferous, .....*A. triandra, Roxb.*

*Subg. 2. Pinanga, Bl.*—Stamens numerous. Stigma 1. Female flowers in grooved series. Spadix simply ramified, or rarely undivided.

× Flowers distichous.

Cæspitose; spadix branched; sheaths, etc., slightly scurvy, ...*A. costata.*

× × Flowers tristichous.

Simple-stemmed; spadix slender, ramified or simple; sheaths, etc., scurvy,

...*A. gracilis, Roxb.*

× × × Flowers 5—6-stichous.

Simple-stemmed; sheaths, etc., scurvy; spadix simple, fleshy, as thick as the finger, .....*A. hexasticha, Kurz.*

§ § § *Phoenixæ.*—Spathes 1 or 2, boat-shaped, persistent. Ovary apocarpous, consisting of 3 distinct carpels. Pinnæ often fascicled.

*PHOENIX, L.*—Dioecious. Corolla in males valvate, in females imbricate in bud. Drupes sappy, solitary. Albumen equable. Simple-stemmed or stoloniferous palms, sometimes stemless. The lower pinnæ reduced to spines.

### Species.

\* Spathes smooth; flowers supported by a small subulate bract.

Stemless; petioles rather long and slender, spiny-armed,

...*P. acaulis, Roxb.*

\* \* Spathes covered with a brown scurf; flowers without a bract.

Simple-stemmed, robust; petioles very short and dilated, spiny-armed; drupes about an inch long, .....*P. sylvestris, Roxb.*

Soboliferous, slender; petioles long and slender, spiny-armed; drupes about  $\frac{1}{2}$  an inch long, .....*P. paludosa, Roxb.*





\* \* Spathes several, tubular or sheathing. Ovary syncarpous.

§ § § § *Caryoteæ*.—Spathes several, tubular or sheathing, persistent. Pinnæ of the leaves often fascicled, jagged or crose-toothed.

*ARENGA, Lab.*—Flowers monoecious in different spadices. Petals of both sexes valvate in bud. Stamens indefinite. Ovary 3-celled. Drupe depressed-3-angular, rather dry, 3-seeded. Albumen equable. Simple-stemmed rarely soboliferous palms. Leaves simply pinnate, the pinnæ linear, at base auricled at one or both sides.

*Arenga saccharifera, Lab.* Only species.

*WALLICHIA, Roxb.*—Flowers monoecious in different spadices, rarely dioecious. Petals in both sexes valvate in bud. Stamens often definite. Ovary 2-celled. Drupe sappy, usually 2-seeded. Albumen equable. Often stemless low palms. Leaves simply pinnate, the segments wedge-shaped.

*Species.*

Spadices smaller, the male spikes almost filiform ; male flowers yellowish ; calyx tubular, about a line long, ..... *W. caryotoides, Roxb.*

Spadices very ample, the male spikes thick and rigid ; male flowers purplish or green ; calyx minute, cup-shaped, only about  $\frac{1}{2}$  lin. long,

... *W. disticha, T. And.*

As preceding, but the male calyx tubular, nearly a line long,

... *W. densiflora, Mart.*

*CARYOTA, L.*—Flowers monoecious on the same spadix. Stamens indefinite. Petals in males valvate, in females imbricate in bud. Ovary 1- or 2-celled. Drupe 1- or 2-seeded, sappy. Albumen ruminant. Simple-stemmed or soboliferous palms. Leaves bipinnate.

*Species.*

Simple-stemmed ; male petals about  $\frac{1}{2}$  inch long by 3 to 4 lin. broad,

... *C. urens, L.*

Usually soboliferous ; male petals about 4 lin. long and only  $1\frac{1}{2}$  lin. broad ; anthers mucronate or emarginate, ..... *C. sobolifera, Wall.*

TRIB. III. FLABELLATE.—Leaves fan-shaped. Perianth complete in both sexes. Erect palms.

§ *Borassinæ*.—Ovary syncarpous, 2—4-celled, with as many ovules. Drupes 2—4-celled, with as many seeds.





**BORASSUS, L.**—Spathes several, incomplete. Male spadix catkin-shaped. Corolla imbricate in bud. Drupe large, fleshy-fibrous, 3-seeded. Seeds pomaceous, with a pore at their apex. Lofty palms. Pinnæ connate, and forming a blade.

*Borassus flabelliformis*, L. Only species.

§ § *Coryphinae*.—Ovary apocarpous, consisting of 3 free or at apex united carpels (or only the styles united), usually only one of the carpels coming to perfection.

**LICUALA, Rumph.**—Inflorescence axillary. Flowers hermaphrodite, solitary or by 2 or 3 together. Corolla 3-parted. Stamens perigynous, the filaments inserted at the throat of the corolla and united into a ring. Drupe sappy. Usually small simple-stemmed or tufted palms. Pinnæ all free to the base, or by 2 or several united into broader or narrower flabellate segments.

*Species.*

× Flowers large. Leaves peltately flabellate.

Calyx about  $\frac{1}{4}$  to  $\frac{1}{2}$  inch long, .. . . . *L. peltata*, Roxb.

× × Flowers small. Calyx not above 2 lin. long. Leaves palmately flabellate.

Trunk 4 to 8 ft. long; petioles aculeate, bordered along their whole length; calyx about a line long, .. . . . *L. paludosa*, Griff.

Almost stemless; petioles unarmed at the upper third of their length; calyx  $1\frac{1}{2}$  lin. long, .. . . . *L. longipes*, Griff.

**CHAMÆROPS, L.**—Inflorescence axillary. Flowers polygamous, several together. Corolla 3-parted. Stamens hypogynous. Drupe sappy. Albumen with a longitudinal furrow. Simple-stemmed or tufted palms. Pinnæ all connate and forming a blade.

*Chamærops Khasyana*, Griff. Only species.

**LIVISTONA, R. Br.**—Inflorescence axillary. Flowers hermaphrodite, clustered. Corolla 3-parted. Stamens perigynous. Drupe sappy. Albumen with a cavity filled up with the intruding integuments. Embryo dorsal. Erect palms perennially flowering. Pinnæ connate and forming a blade.

*Livistona speciosa*, Kurz. Only species.

**CORYPHA, L.**—Inflorescence terminal. Secondary and tertiary spathes many. Flowers hermaphrodite, clustered. Corolla consisting of 3 free petals. Stamens hypogynous. Drupe corticate. Albumen hollow in centre or solid. Embryo apical. Lofty or rarely stemless palms, flowering once only and then dying off. Pinnæ connate and forming a blade.



*Species.*

\* Simple-stemmed often lofty palms. Petioles comparatively short.

Trunk annular or almost even; drupes the size of a wood-apple,

... *C. umbraculifera*, L.

Trunk marked by the spiral scars of the fallen spirally arranged leaves; drupes the size of a cherry, ..... *C. Gebanga*, Bl.

\* \* Stemless.

Petioles 18 to 25 ft. long; drupes the size of a cherry, *C. macropoda*, Kz.

SUBFAM. II. CALAMEÆ.—Fruits covered by retrorsely imbricate scales. Seeds often spuriously arillate. Usually armed climbers, rarely erect or unarmed.

TRIB. I. FLABELLATE.—Leaves fan-shaped. Nearly all American.

TRIB. II. PINNATE.—Leaves pinnate.

\* Flowers spirally arranged, forming a more or less dense cylindrical catkin-like spike.

KORTHALSIA, Bl.—Spikes villous-bracteole or the bracteoles glabrous, forming elongate panicles. Spathes tubular. Albumen ruminant. Scandent palms, sparingly armed.

*Species.*

Spines on the petioles almost straight, 3 to 4 lin. long; drupes obovoid,  $\frac{1}{2}$  inch long, ..... *K. scaphigera*, Mart.

Spines on the petioles short, reflexed; drupes turbinate (globular), the size of a small pea, ..... *K. laciniosa*, Mart.

ZALACCA, Rumph.—Spikes villous-bracteole, forming elongate panicles. Spathes elongate, cleft to the base. Seeds arillate. Albumen equable. Stemless or almost stemless erect palms, more or less armed.

*Zalacca Wallichiana*, Mart. Only species.

\* \* Flowers distichous (very rarely spuriously unilateral).

CALAMUS, L.—Flowers usually sessile, solitary in the spathules, or rarely in a short curved spikelet exerted from the spathule, forming elongate



more or less pendulous panicles. Spathes tubular or flattened out from a tubular base, persistent. Spathules cymbiform or tubular. Seeds arillate. Albumen equable, but often pitted or erose on the outside. Scandent, rarely erect rattan-palms, more or less fearfully armed.

*Species.*

- \* Drupes sessile, *i. e.*, the perianth more or less spreading and adhering to the base of the fruit. Spathules of the spikes much imbricated, the exserted part cymbiform, shorter than broad, more or less truncate.

O Scales of fruit without a conspicuous appendage.

\* Δ Pinnæ equidistant. No leaf-tendrils.

Erect, tufted; pinnæ white beneath. No tendrils whatever,

...*C. arborescens*, Griff.

Erect, tufted; leaves uniformly green, without (but the sheaths and spadices with) tendrils, .....*C. erectus*, Roxb.

Δ Δ Pinnæ fascicled or interruptedly approximate.

Young stems, etc., whitish powdery; leaves without tendrils; pinnæ interruptedly fascicled; drupes globular, straw-coloured,

...*C. fasciculatus*, Roxb.

Glabrous; leaves tendril-bearing; pinnæ broad, alternately approximate; drupes oblong, brown, .....*C. latifolius*, Roxb.

O O Scales of fruits produced into a fringed appendage as long or longer than the crustaceous scale itself.

Leaves tendril-bearing; inflorescence without tendril; drupes  $\frac{1}{2}$  inch long, uniformly brown, .....*C. Andamanicus*, Kurz.

Leaves without tendrils; inflorescence with tendrils; drupes an inch long or somewhat longer, dark and pale brown variegated, *C. tigrinus*, Kurz.

- \* \* Drupes seated on the erect indurated thick pedicel-like perianth. Spathules usually long-exserted and tubular, rarely cymbiform and imbricate, usually not truncate.

O Spathules imbricate, broader than long, truncate.

Leaves without tendrils; pinnæ equidistant; drupes globular,  $\frac{1}{2}$  inch thick, straw-coloured, .....*C. tenuis*, Roxb.

O O Spathules exserted and rather elongate.

× Spathes with a short acute limb only.

Leaves not tendril-bearing; pinnæ interruptedly approximate; drupes ellipsoid, straw-coloured, nearly an inch long, .....*C. gracilis*, Roxb.

Leaves not tendril-bearing; pinnæ equidistant, narrow; spathes green, very thin, compressed-tubular, almost unarmed, .....*C. Helferianus*, Kurz.

Leaves tendril-bearing; pinnæ distant, alternately approximate; male flowers in recurved small spikelets or fascicles exserted from the spathules,

...*C. paradoxus*, Kurz.



× × Lower spathes expanded into a flat elongate limb, tubular at the short base only.

Leaves not tendril-bearing; pinnæ narrow, equidistant; drupes globular, the size of a pea, the scales straw-coloured with blackish-brown borders,

...*C. Guruba*, Ham.

**DÆMONOROPS**, *Bl.*—Flowers usually pedicelled, naked or nearly so. Spathes cleft to the base, deciduous, the outer one boat-shaped. Spathules incomplete, reduced to bracteoles. Spadix erect, stiff, never tendril-bearing. Albumen usually ruminant. Scandent rattan-palms, more or less fearfully armed.

### *Species.*

\* Spathes unarmed or nearly so.

Leaves not tendril-bearing; pinnæ interruptedly-approximate, white beneath, .....*D. hypoleucus*, Kurz.

\* \* Spathes (at least the outermost one) much armed with thorns or spines.

Leaves uniformly green; sheaths and spathes outside fearfully armed with flat glossy black spines; drupes globular, the size of a cherry,

...*D. grandis*, Griff.

**PLECTOCOMIA**, *Bl.*—Flowers in small naked racemes or spikes, hidden by the imbricate distichous secondary spathes, the latter forming long tail-shaped one-sided paniced pendulous catkins. Spathes many, tubular. Drupes retrorsely hispid. Albumen equable. Scandent often lofty rattan-palms, more or less armed.

*Plectocomia macrostachya*, Kurz. Only species

## ENUMERATION OF THE SPECIES.

### NIPA, *Rumph.*

1. *N. FRUTICANS*, *Wurmb. in Verh. Bat. Genootsch.*, I, 349; *Lab. in Mém. Mus.*, V, 297, t. 21-22; *Roxb., Fl. Ind.*, III, 650; *Mart., Palm.*, 305, t. 108, 171-172; *Bl. Rumph.* III, 76, t. 105, 164-165; *Griff., Not. Monocot.*, 168, t. 244-247; *Miq., Fl. Ind. Bat.*, III, 150.

**HAB.** Common along the estuaries of the rivers, and in tidal forests all along the shores, from Chittageng down to Tenasserim and the Andamans.

*Dane of the Burmese.*



COCOS, *L.*

2. *C. NUCIFERA*, *L.*, *Fl. Zeyl.*, 391; *Roxb., Corom. Pl.*, I, 52, t. 37, et *Fl. Ind.*, III, 614; *Mart., Palm.*, 123, t. 62-63 et t. 88, f. 3-6; *Miq., Fl. Ind. Bat.*, III, 64.

HAB. Generally cultivated all over Burma, more especially within the influence of the sea, and also wild along the sandy beaches of the Cocos islands. Fl. C. S., Fr. H. S.

*Ung* is the Burmese name of the cocos-palm.

ARECA, *L.*

3. *A. CATECHU*, *L.*, *sp. pl.*, 1189; *Roxb., Corom. Pl.*, I, 54, t. 75 et *Fl. Ind.*, III, 615; *Hayne, Arznei Gew.*, VII, t. 35; *Mart., Palm.*, 169 et 311, t. 182 et t. 149, f. 4, t. Z, X, f. 11.; *Bl. Rumph.*, II, 65, t. 102 A, et t. 104; *Miq., Fl. Ind. Bat.*, III, 8; *Griff., Ind. Palm.*, 147, et in *Macl. Calc. Journ.*, V, 450; *Scheff., Group. d. Arec.*, 9.

HAB. Frequently cultivated by the Burmans and Karens, especially in Martaban and Tenasserim.

*Kunti* is the Burmese name.

4. *A. TRIANDRA*, *Roxb., Fl. Ind.*, III, 617; *Griff., Ind. Palm.*, 148, t. 230, A, et in *Macl. Calc. Journ.*, V, 451; *Mart., Palm.*, 171, t. 149, f. 1-3; *Scheff., Group. d. Arec.*, 16. (*A. laxa*, *Ham. in Mem. Wern. Soc.*, V, 309; *Griff., Ind. Palm.*, 149, et in *Macl. Calc. Journ.*, V, 452; *Scheff., Group. Arec.*, 17; *A. pumila*, *Bl. Rumph.*, II, 71, t. 99 et 102, non *Mart. nec Griff., Scheff. Group. d' Arec.*, 15).

HAB. Not unfrequent in the evergreen tropical forests from Martaban down to Tenasserim and the Andamans; also in Chittagong. Fl. H. and R. S.; Fr. the following year.

*Tau Kunti* (wild betel-palm) is the Burmese name of this as of all other wild species of *Areca*; the Andamanese call it *abaradah*.

5. *A. COSTATA*, (*Pinanga costata*, *Bl. Rumph.*, II, 80, t. 109; *Pinanga Kuhlii*, *Bl. Rumph.*, II, 82, t. III, *Scheff., Group. d. Arec.*, 34; *Seaforthia Kuhlii*, *Mart., Palm.*, 185, t. 6, t. Z, f. 4 et 5).

HAB. In the evergreen tropical forests of the Andamans, around Mount Harriet, and probably elsewhere. Fr. June.

I have changed the specific name according to a rule laid down in De Candolle's 'Laws of Botanical Nomenclature.' Dr. Scheffer and a very few others object to this rule, but to me it appears a sound one inasmuch as it rigorously compels an author to adopt a name which otherwise would be altered either out of pedantry or personal feelings, for illustrations of which Dutch literature especially furnishes examples enough. The rule is exact and therefore truly scientific, admitting of no excep-





tion but in cases of absolute absurdity\*: it prescribes with almost mathematical precision the ultimate change. Why, for example, should we call *Guatteria pallida*, Bl., at present *Marsypopetalum ceratosanthes*, Scheff., and not *M. pallidum*? or why should the well-known *Fimbristylis diphylla*, with its pageful of synonyms, be rechristened *F. polymorpha*, Boeck.? The objection raised on account of increase of names *absque necessitate* is a feeble one, and cannot counterbalance the advantages of a strict rule against arbitrary acts.

6. *A. GRACILIS*, Roxb., *Fl. Ind.*, III, 619; *Griff.*, *Ind. Palm.*, 154, t. 232, A—C, et in *Macl. Calc. Journ.*, V, 459.

HAB. Frequent in the evergreen tropical forests, especially in marshy places, from Chittagong, Pegu, and Martaban down to Tenasserim. Fl. H. and R. S.; Fr. the following year.

Dr. Scheffer identifies this species with Blume's *Pinanga patula*; *P. patula*, however, has distichous flowers, quite different fruits, and smooth sheaths and spadices. Again, *A. disticha*, Roxb. (of which *Ptychosperma simplicifrons*, Miq. is an exact synonym), which has a hispid spadix and scurvy sheaths and spathes, is also reduced to his *Pinanga patula*—a course in which I cannot follow him.

7. *A. HEXASTICHA*, n. sp., Pl. XII.

A slender simple-stemmed gregarious palm, 20 to 30 feet high, the stem 3 to 4 in. in girth, the sheaths, etc. thinly scaly-rough, soon turning glabrous; leaves 3 to 5 feet long, pinnate with the end-pinnæ confluent, on a short (3 to 4 in. long) scaly-rough petiole broadly sheathing at the base; pinnæ linear, somewhat falcate, 1 to 1½ feet long, alternate, 2- to 3-ribbed and many-nerved, the lower ones acuminate, the upper and terminal ones crenate-lobed and ending in as many bluntish and shortly 2-lobed lobes as there are ribs: flowers sessile, spirally arranged in 5, higher up in 6, grooved rows along the simple reflexed spike up to a foot long, the rachis as thick as the finger, fleshy; female perianth (in young fruit) very much like that of *A. gracilis*, the sepals and petals almost conform, broad-oval, blunt or bluntish, about a line long or a little longer; staminodes apparently

\* If in such cases a rule were to be established to the effect that a species thus changed in name should be called after the author who first named and described it, the cases of doubt would be reduced to a minimum. Dr. Mueller Arg. has given some additional rules in his "Nomenclatorie fragments" defending his harpagean principles adopted in the 15th vol. of De Candolle's *Prodromus*, but I think that few, if any, right-minded men would refuse to adopt a MS. name, if they have knowledge of the same or if they have the plant, authentically named, at their disposal. On the other side, I fully agree that MS. names, the plants of which are inaccessible to an author, even if published but not characterized, are truly valueless "nomina chartacea," and as such reducible to species described at a later date. No one will ever persuade me to spend a few thousand rupees on a journey to Europe for the purpose of unearthing MS. names!





none; unripe fruits fibrous-fleshy, smooth, spindle-shaped, and narrowed at apex.

HAB. In marshy places of the evergreen tropical forests of the southern parts of the Pegu Yomah, as for example between Kyauzoo and Kya Eng (Pazwoondoung-valley).

#### PHOENIX, L.

8. PH. ACAULIS, Roxb., *Hort. Beng.*, 73 et *Fl. Ind.*, III, 783; Griff. in *Macl. Calc. Journ.*, V, 345 et *Ind. Palm.*, 137, t. 128; Mart., *Palm.*, t. 136.

HAB. Frequent in the Eng-forests all over Pegu, Prome, and Martaban. Fl. March—Apr.; Fr. May—June.

This species is called in Burma *Thenboun* like all others of the genus.

9. PH. SYLVESTRIS, Roxb., *Hort. Beng.*, 73 et *Fl. Ind.*, III, 787; Griff. in *Macl. Calc. Journ.*, V, 350 et *Ind. Palm.*, 141, t. 228; A. Mart., *Palm.*, t. 136.

HAB. Chittagong, cultivated only; said to be also cultivated in Ava. Fl. begin of H. S.; Fr. C. S.

As indeed Griffith remarks, *Ph. dactylifera*, L., differs hardly, and possibly solely by larger fruits. The fact that *Ph. dactylifera* will not succeed in the moister parts of India, may be an idiosyncrasy acquired by long cultivation in arid districts.

10. PH. PALUDOSA, Roxb., *Hort. Beng.*, 73 et *Fl. Ind.*, III, 789; Griff. in *Macl. Calc. Journ.*, V, 353 and *Ind. Palm.*, 144, t. 229, A—B. (*Ph. Siamensis*, Miq., *Palm. Archip. Ind.*, 14).

HAB. Common in the tidal forests all over Burma from Chittagong down to Upper Tenasserim and the Andamans. Fl. March—Apr.; Fr. June—Decb.

#### ARENGA, Labill.

11. A. SACCHARIFERA, Lab., *Mém. l' Inst.*, IV, 209.; Mart., *Palm.*, 191, t. 108 et t. 161, f. 4, t. Z, IV, f. 11, XVII, f. 1; Miq., *Fl. Ind. Bat.*, III, 35; Griff. in *Macl. Calc. Journ.*, V, 472 and *Ind. Palm.*, 164, t. 233, A.—(*Sagguerus Rumphii*, Roxb., *Fl. Ind.*, III, 626).

HAB. Frequent in the evergreen tropical forests of Martaban and Tenasserim, also occasionally in those of the eastern slopes of the Pegu Yomah. Fl. all the year; Fr. the following year.

*Toung-ong* is the Burmese name. Griffith has been much blamed for having cut down the numerous areng-palms in the Calcutta Botanical Garden, and for having thus deprived the garden of one of its "ornaments." This censure must remain a matter of opinion, for I believe that few will be found who would detect any beauty in them, but many would



rather concur with Rumphius, who compared the palm to a "ragged dirty drunken fellow."

Besides its well-known value for toddy, sugar, and fibre, this palm is especially adapted for the support of orchids, ferns, and other epiphytical plants, for which purpose it is highly recommendable to horticulturists in tropical climates.

#### WALLICHIA, Roxb.

12. *W. CARYOTOIDES*, Roxb., *Corom. Pl.*, III, 91, t. 295; *Miq.*, *Fl. Ind. Bat.*, III, 34. (*Wrightia caryotoides*, Roxb., *Fl. Ind.*, III, 621; *Harina caryotoides*, Ham. in *Wern. Soc.*, V, 317; *Griff.* in *Macl. Calc. Journ.*, I, 485 and *Ind. Palm.*, 174, t. 237; *W. densiflora*, Hook., *Bot. Mag.*, t. 4584, viz *Mart. nec Griff.*).

HAB. In the evergreen tropical and damp hill-forests of Martaban and Tenasserim; also in the hills of eastern Ava and Chittagong, up to 4000 feet elevation. Fl. R. S.; Fr. the following year.

*Zanong* is the Burmese name of this as also of the other species of the genus.

13. *W. DENSIFLORA*, Mart., *Palm.*, ed. I, 189 and suppl., 190. (*W. oblongifolia*, *Griff.* in *Macl. Calc. Journ.*, V, 486, and *Ind. Palm.*, 175, t. 237, A—C).

HAB. Not frequent in the moister upper mixed and tropical evergreen forests of Arracan, apparently always on siliceous sandstone; also Chittagong. Fl. Apr.

13b. *W. DISTICHA*, T. And. in *Journ. Linn. Soc. Lond.*, XI, 6.

HAB. Not unfrequent in the moister upper mixed forests of the eastern slopes of the Pegu Yomah, and on the spurs of the Kambala-toung. Fl. Apr.

The Burmese plant differs chiefly by much longer (1½-2 ft. long) pinnae, and may possibly form a distinct species. It is also a much lower palm.

#### CARYOTA, L.

14. *C. URENS*, L., *Fl. Zeyl.*, 187; Roxb., *Fl. Ind.*, III, 625; Mart., *Palm.*, 193, t. 107-108, 168 and t. V, f. 1-3 and 11; *Miq.*, *Fl. Ind. Bat.*, III, 41; *Griff.* in *Macl. Calc. Journ.*, V, 478. and *Ind. Palm.*, 169.

HAB. Frequent in the upper mixed forests of the Pegu Yomah and Ava. Fl. Sept.

Burmese call this, as also the other species, *minbo*.

15. *C. SOBOLIFERA*, Wall. in Mart. *Palm.*, 194, t. 107, f. 2? *Miq.*, *Fl. Ind. Bat.*, III, 41? *Griff.* in *Macl. Calc. Journ.*, V, 481 and *Ind. Palm.*, 171, t. 236 (*simple-stemmed*)? (*C. Cummingii*, Lodd. ex Mart., *Palm.*, III, 159? *Bot. Mag.*, t. 5762; *C. Griffithii*, Beccari in *Giorn. Ital.*).





HAB. Frequent in the evergreen tropical forests from Arracan down to the Andamans, and from Martaban down to Tenasserim. Fl. Fr. C. and H. S.

I entertain little doubt but that the *Caryota* so plentiful in the Burmese jungles is Loureiro's *C. mitis*, the more so as the same plant occurs also in Siam.

#### BORASSUS, L.

16. *B. FLABELLIFORMIS*, L., *Mus. Cliff.*, 13; *Roxb., Corom. Pl.*, I, 50, t. 71-72, and *Fl. Ind.*, III, 790; *Mart., Palm.*, 219, t. 108, 121, 162; *Miq., Fl. Ind. Bat.*, III, 45. (*B. sp.*, *Griff., Not. Monoc.*, 167).

HAB. Frequently cultivated all over Burma, more especially; however, in Ava and Prome; along the sandy sea coast sometimes growing like wild, but also in the dry Prome-district the palm is freely springing up in jungles. Fl. March—Apr.; Fr. Close of rains.

*Htan* is the Burmese name of the palmyra.

#### LICUALA, Rumph.

17. *L. PELTATA*, *Roxb., Fl. Ind.*, II, 179; *Mart., Palm.*, 284, t. 134 et 162; *Griff., Palms*, 120, t. 222 and in *Macl. Calc. Journ.*, V, 324.

HAB. Frequent in the evergreen tropical forests all over Burma from Chittagong, Pegu, and Martaban down to Tenasserim and the Andamans. Fl. begin of C. S.; Fr. H. S.

*Zaloon* of the Burmese; the Andamanese call it *gobol*.

18. *L. PALUDOSA*, *Griff. in Mart. Palm.*, 318; *Macl. Calc. Journ.*, 323 and *Ind. Palm.*, 118, t. 221, A—C.

HAB. Frequent in the tidal forests and in marine swamps along the coast of the Andamans. Fr. Apr. May.

19. *L. LONGIPES*, *Griff. in Mart. Palm.*, 318 and in *Macl. Calc. Journ.*, V, 330 and *Ind. Palm.*, 125, t. 224, A—B.

HAB. Tenasserim, forests near Laineur, to the south of Mergui (*Griff.*). Fl. nearly the whole year.

#### CHAMEROPS, L.

20. *CH. KHASIANA*, *Griff. in Macl. Calc. Journ.*, V, 341 and *Ind. Palm.*, 134, t. 227, A—B.

HAB. Not unfrequent in the drier hill and pine forests of Martaban, and probably also in the Ava hills, at 4000 to 6500 feet elevation.

It remains to be shewn how this species differs from *Ch. Martiana*, *Wall.*, which is said to have yellow lepidote fruits.

#### LIVISTONA, R. Br.

21. *L. SPECIOSA*, *n. sp.*, *Pls.* XIII and XIV.

A lofty simple-stemmed palm, 50 to 70 feet high, the trunk 40 to 60 feet



long by 3 to 5 feet girth, all parts glabrous; leaves palmately flabellate, about 6 to 7 feet across, plaited, the petiole up to an inch broad at base, armed with strong sharp falcately curved flattish blackish spines, the lower spines up to half an inch long and longer by 3 to 4 lines broad at base; the sheaths dividing into netted fibres; pinnæ all (the lateral ones up to half of their length, the central ones higher up) connate in a blade, linear, sharply 2-cleft at apex, the ribs compressed, prominent, the veins rather visible and transverse; flowers small, solitary or by 2 on a nipple-shaped very short and thick pedicel, racemose-spicate, forming a much branched smooth panicle-shaped, 2 to 4 feet long spadix, furnished at the base and along the primary axes with large fuscous quite smooth spathes; sepals and petals hardly a line long; drupes elliptically obovoid,  $\frac{3}{4}$  to nearly an inch long, dark blue, smooth, 1-seeded, seated on the short thick indurated perianth jointed with the nipple- or disk-shaped very short peduncle.

HAB. Frequent in the evergreen tropical forests of the eastern and southern slopes of the Pegu Yomah; Upper Tenasserim (Brandis). Fr. March—Apr.

Called *tau-htan* by the Burmese. Very similar to *L. Jenkinsiana*, Griff., but loftier, and differing chiefly by the smooth (not scurvy) spathes and in shape of fruits. The armature seems more developed in my species.

#### CORYPHA, L.

22. *C. UMBRACULIFERA*, L., *Hort. Cliff.*, 482; *Mart., Palm.*, 232, t. 108 and 127, f. 2. *Roxb., Fl. Ind.*, II, 177; *Miq., Fl. Ind. Bat.*, III, 49, ecl. syn. (*C. Talliera*, *Roxb., Corom. Pl.*, III, 51, t. 255-256 and *Fl. Ind.*, II, 174.; *Griff., Ind. Palm.*, 114, t. 220, E, and F and in *Macl. Calc. Journ.*, V, 317.)

HAB. Frequently seen cultivated in villages all over Burma. Fl. H. S.; Fr. the following year.

*Pae* is the Burmese name of this and all the other species of *Corypha*.

23. *C. GEBANGA* *Bl. Rumph.*, II, 59, t. 97-98 and 105. (*C. elata*, *Roxb., Fl. Ind.*, II, 176; *Mart., Palm.*, 233; *Griff. in Macl. Calc. Journ.*, V, 314 and *Ind. Palm.*, 112, t. 220, D.).

HAB. Only occasionally seen in Burmese villages, as for example around Tounghoo. Fl. H. S.; Fr. the following year.

24. *C. MACROPODA*, *Kurz in Andam. Rep.*, ed. 2, 50.—Pl. XV.

A gigantic stemless palm, 30 to 40 ft. high, all parts glabrous; leaves very ample, palmately flabellate, from 12 to 20 ft. across, the petiole towards the base as thick as the arm, straight and slender, from 18 to 25 ft. long, along the polished margin armed with strong incurved compressed glossy black spines; pinnæ united to near the middle into a blade, 6 to 10 ft. long, linear, 2-lobed and bluntish at apex, the ribs 4-cornered; inflorescence





and flowers unknown; drupes the size of a cherry, globular, with one or two small abortive ovaries at their base, smooth, olive-brown, 1-seeded.

HAB. In the bamboo jungles of Termoklee island, western side of South Andaman, on chloritic rocks.

Called *dondah* by the Andamanese. I have not seen the palm in flower, but judge it to be stemless from having failed to detect any indication of a stem in the numerous full-grown specimens I met with accompanied by seedling-plants, which latter had their roots so deeply seated in the rocky ground that I did not reach them after digging to a depth of more than 2 feet.

#### KORTHALSIA, Bl.

25. K. SCAPHIGERA, *Mart. Palm.*, 211.—(*Calamosagus scaphiger*, *Griff. Ind. Palm.*, 30, t. 184 *A. young plant*; *Calamosagus wallichiaefolius*, *Griff. in Maccl. Calc. Journ.*, V, 24 and *Ind. Palm.*, 29, t. 184 *sub nom. C. harinaefolius*.)

#### Pls. XX, A, and XXI.

A large scandent rattan palm, the canes up to half an inch in diameter, the young leaves beneath fugaceously white-tomentose; leaves pinnate, 2 to 4 ft. long, the rachis sparingly armed with short simple sharp retrorse spines and terminating in a long recurved-thorny tendril, the petiole  $\frac{1}{2}$  to 2 ft. long, irregularly beset with thin sharp rather straight spines 2 to 4 lin. long, the sheaths minutely brown-scurvy (in young plants sparingly prickly) dissolving along their margins into fibres embracing the stem; pinnæ at base contracted into a compressed petiolule, alternately somewhat approximated, plaited, broadly rhomboid-ovate, the upper ones cuneate-rhomboid, acuminate, from about the middle irregularly and sharply erose-toothed (the teeth formed by the more or less subulate-excurrent veinlets), many-nerved, 4 to 7 in. long, the terminal segment much broader; spadices long and pendulous, terminal, the tubular spathes (in fruit) smooth, brown; catkins very compact and terete, on a short sheathed peduncle, densely tawny tomentose, 3 to 4 in. long, about 4 lin. thick; bracts very broad, rounded or almost acute, smooth, a little longer than the densely villous bracteoles; female calyx rigid, more than  $\frac{1}{2}$  lin. long, fibrous-ciliate; corolla nearly 2 lin. long, very rigid-coriaceous, deeply 3-cleft, the tube very short; drupes obovoid, mucronate,  $\frac{1}{2}$  inch long, retrorsely imbricate-sealed, 1-seeded; scales rigid, trapezoid-ovate, longitudinally impressed, greenish, towards the apex brownish, bordered by a pale brown broadly lacerate narrow bluntish membrane.

HAB. Common all over the Andamans, especially in the evergreen tropical forests. Fr. H. S.

Called *bordah* by the aborigines. On the Andamans occurs another species of the habit of the preceding but with the sheaths densely





covered by sharp spines. Unfortunately, I neglected to collect specimens from the sterile plants, which alone I met with.

26. *K. LACINIOSA*, Mart., *Palm.*, 211. (*Calamosagus laciniosus*, Griff. in *Macl. Calc. Journ.*, V, 23 c. tab. and *Ind. Palm.*, 27, t. 183 and t. 216, f. 2. (*K. flagellaris*, Miq., *Suppl. Fl. Sumat.*, 591).

HAB. Tenasserim, from the Salween down to Mergui. Fr. March.

I have no clear idea of this species, which would differ from the former by the shape of the drupes. The armature of the sheaths and nature of the dentation of the leaves are, as I find, somewhat variable. *C. ochriger*, Griff. (*Ind. Palm.*, t. 216, f. 1), of which authentic specimens exist in H. B. C., is *K. rigida*, Bl. exactly. Miquel reduces his *K. flagellaris* to *K. angusta*, Bl. I have not seen the latter species, but if his conclusion be correct, then *K. laciniosa* and *K. angusta* must fall together.

#### ZALACCA, Rumph.

27. *Z. WALLICHIANA*, Mart., *Palm.*, 201, t. 118-119 and 136; *Miq.*, *Fl. Ind. Bat.*, III, 80, quoad descr. (*Z. edulis*, Wall., *Pl. As. rar.*, III, 14, t. 222-224 sub nom. *Z. Rumphii*; Griff. in *Macl. Calc. Journ.*, V, 7. p. p. and *Ind. Palm.*, 10, t. 175? *Calamus Zalacca*, Roxb., *Hort. Beng.*, 72 and *Fl. Ind.*, III, 773).

HAB. Frequent in the evergreen tropical forests all over Pegu and Martaban down to Tenasserim. Fl. C. S.; Fr. June, July.

*Yeinga* or *yengan* Khyen Burmese.

Wallich and Griffith reduce this species to *Z. edulis*, Rwdt. but it seems to differ by much smaller fruits, sessile catkins, and the leaves being green on both sides.

#### PLECTOCOMIA, Bl.

28. *P. MACROSTACHYA*, n. sp., Pls. XVI and XVII.

A lofty climber, all parts glabrous; leaves pinnate, the petiole and rachis spiny, the spines straight, up to  $\frac{1}{2}$  inch long; pinnæ (median ones) somewhat approximate by pairs, linear-lanceolate,  $\frac{1}{2}$  to 2 ft. long, long-acuminate, white-powdery beneath, 3-ribbed (2 of the ribs marginal), coriaceous, but rather flaccid; spadices not seen; lateral spikes 4 to 5 ft. long, about 2 in. thick, somewhat compressed, pendulous; spathules distichous, rhomboid-obovoid, acute,  $1\frac{1}{2}$  to nearly 2 in. long, coriaceous, brown, blackish towards the upper borders, glabrous; male spikelets as long as the spathules, rusty-scurvy-strigillose, the rachis rather strong, shortly and distichously branched; female flowers not seen; male flowers: calyx wide, cup-shaped, about a line deep, shortly 3-toothed, the teeth acute, bordered especially in their sinuses by a dense brown woolly tomentum; petals rigid, falcate, lanceolate, sharply acuminate, about  $\frac{1}{2}$  inch long or somewhat longer, sulcate outside; stamens 6; drupes unknown.





HAB. Tenasserim, Bithoko range, at 3000 ft. elevation (Dr. Brandis).

Allied to *P. elongata*, Bl., but easily distinguished by the doubly larger flowers and the larger and more densely imbricate spathules.

#### DÆMONOROPS, Bl.

##### 29. *D. HYPOLEUCUS*, n. sp., Pls. XVIII and XIX.

Apparently a slender scandent rattan palm, the sheathed stems as thick as the finger, the canes as thick as a common quill; leaves interruptedly pinnate, 2 to 3 ft. long, without tendril, the petioles short, often saccate at base, armed with shorter and longer conical thorns on the back and along the margins sparingly intermixed with somewhat recurved straight short spines, the reddish rachis similarly but more sparingly armed, upwards simply recurved spiny; the sheaths armed like the petiole but very densely so with unequally long straight sharp spines up to an inch long or longer towards the mouth, in front sending out a long prickly recurved-thorny whip-like tendril; pinnæ  $\frac{1}{2}$  to  $\frac{3}{4}$  ft. long, alternately and interruptedly approximate by twos on each side, oblong-lanceolate, acuminate, bristly ciliate towards the apex, white beneath, many-nerved; female spadix small, only  $\frac{1}{2}$  ft. long, on a slender peduncle (about an inch long) thorny on both margins; spathes unarmed or occasionally with a minute prickle on the midrib, smooth, lanceolate-oblong, slit almost to the base; spathules shortly tubular with an acuminate limb, small and distant; female flowers minute, about a line long, distichous; calyx shortly 3-lobed,  $\frac{1}{2}$  lin. long; corolla twice as long with a short tube, the lobes linear-lanceolate, acute; male flowers and fruits unknown. (*Calamus hypoleucus*, Kz. olim).

HAB. Tenasserim, Thounggyeen (Dr. Brandis). Fl. March.

30. *D. GRANDIS*, Griff. in Mart., *Palm.*, A—C and t. 216, 327, t. 175, f. ix, t. Z, xii, f. 11; Miq., *Fl. Ind. Bat.*, III, 88. (*Calamus grandis*, Griff. in Maccl. Calc. Journ., V, 84 and *Ind. Palms*, 91, t. 210, A—C and t. 216, f. 3.)

HAB. In the evergreen tropical forests of Rutland-island, Andamans. Fr. May.

There grow two or three other species of *Dæmonorops* in Chittagong, Arracan, and the other provinces of Burma, but these I know from insufficient MS. figures only or from having merely seen them growing.

N. B. *D. Hystrix*, Griff. is certainly identical with *D. oblongus*, Bl.; the spines in the latter become quite as long as in the former.

#### CALAMUS, L.

31. *C. ARBORESCENS*, Griff. in Maccl. Calc. Journ., V, 33 and *Ind. Palms*, 46, t. 188, A—C; Miq., *Fl. Ind. Bat.*, III, 113.—Pl. XXII.





The insertion of the stamens would appear to vary somewhat. In my specimens they are inserted at the base of the corolla and free; filaments not infracted, shorter than the anthers. Drupes obovoid-oblong,  $\frac{1}{2}$ - $\frac{3}{4}$  inch long, apiculate, supported by the coriaceous somewhat enlarged perianth, 1-seeded; scales uniformly brown, with a very narrow whitish minutely erose border, cordate-trapezoid, rounded at apex, almost biconvex from a longitudinal central furrow.

HAB. Frequent in marshy beds of choungs, in the moister and evergreen tropical forests of Pegu, on sandstone. Fr. C. S.

Called *thanoung* by the Burmans.

This is the only Burmese species which may truly be called arboreous, having no tendrils whatever. All others are furnished with such tendrils, either terminating their leaves (*flagellæ*), in which case the inflorescences are axillary (actually they spring from near the base of the opposite leaf) and destitute of spadical tendrils (*loræ*); or the leaves are destitute of them, and the tendrils arise near the apex of the sheath of the opposite leaf, in which case the inflorescences are leaf-opposed and tendril-bearing (or rather the *loræ* grow out into inflorescences). In classification, these several relations have no great value, as an arrangement based upon such characters removes nearly allied species far from each other, as for example *C. Andamanicus* from *C. tigrinus*.

32. *C. ERECTUS*, Roxb., *Fl. Ind.*, III, 774; Griff. in *Macl. Calc. Journ.*, V, 35. (*C. longisetus*, Griff. in *Macl. Calc. Journ.*, V, 36 and *Ind. Palms*, 44, t. 189, A—B; Miq., *Fl. Ind. Bat.*, III, 114; *C. macrocarpus*, Griff., *Ind. Palms*, 40, t. 186, A, f. 1-2; Mart., *Palm.*, 333, t. 176, f. X).

Pls. XXIII and XXIV.

A low erect tufted palm, looking like *Zalacca*, 12 to 18 feet high, all parts glabrous; leaves 18 to 12 feet long, pinnate, without tendril, the petiole as also the sheaths armed with seriate greenish or fuscous flat sharp spines up to an inch long, the rachis similarly armed, but the spines gradually becoming fewer in number towards the apex; pinnæ by 5 or fewer alternately approximate, elongate-linear-lanceolate, glossy, green on both sides, many-nerved and transversely veined, acuminate, spinulose-ciliate,  $1\frac{1}{2}$  to 2 feet long by  $1\frac{1}{2}$  to 2 inches broad, the midrib beneath armed with distant capillary bristles; spadices elongate, branched, terminating in a whip-like recurved-thorny tendril; spathes somewhat compressed, linear-tubular, acuminate, armed with half-whorls of flat upwardly and downwardly directed spines up to  $\frac{1}{2}$  inch long, the partial spathes unarmed, shaped and rupturing like those of *Zalacca*; spathules imbricate, cymbiform, almost truncate, glabrescent, fibrous-dissolving at their longer extremity; flowers distichous; calyx a little longer than the bract, shortly 3-toothed; corolla nearly 3 times longer, the tube narrow, nearly as long as the calyx, the lobes linear-oblong; sta-



mens in males free, the filaments broad, not infraacted, shorter than the anther; drupes more than an inch long, ovoid-oblong, apiculate, glossy, brown, 1-seeded; scales imbricate, cordate-trapezoid, fuscous, towards the base paler coloured, almost biconvex with a rather broad longitudinal central furrow, bluntish, the margins not bordered and almost entire; seed oblong, somewhat compressed, the albumen foraminate-crose, surrounded by a resinous crust.

HAB. Evergreen tropical forests of Chittagong and Pegu. Fr. C. S.

According to Roxburgh, the species is called in Chittagong *Sungotta*, but specimens collected there by Dr. Thomson bear the name *rong*—the name by which it goes in Sikkim also. The Burmese call it *theing*.

33. *C. FASCICULATUS*, Roxb., *Fl. Ind.*, III, 779; Griff. in *Macl. Calc. Journ.*, V, 52 and *Ind. Palms*, 62, t. 195, A—B (*excl. infl. in B*) and t. 190, A, f. 2; Miq., *Fl. Ind. Bat.*, III, 127; Mart., *Palm.*, 210 and 238, t. 116, f. IV and VI.—Pl. XXVII, B.

HAB. Frequent in the mixed deciduous forests, especially in the lower ones, all over Burma, from Ava and Chittagong down to Tenasserim and the Andamans. Fl. Sept. Octob.; Fr. Apr. May.

Called *Kane ga* in Burma.

It often happens that the fruits in this species become monstrous, as shewn in the plate.

34. *C. LATIFOLIUS*, Roxb., *Fl. Ind.*, III, 775; Griff. in *Macl. Calc. Journ.*, V, 60 and *Ind. Palms*, 68, t. 198. (*C. palustris*, Griff. in *Macl. Calc. Journ.*, V, 61 and *Ind. Palms*, 72, t. 199? Miq., *Fl. Ind. Bat.*, III, 131?).—Pl. XXXI, A.

An extensive scandent rattan palm, all parts glabrous, the sheathed stems 2 to 3 in. diameter, the canes up to an inch thick; leaves 8 to 12 feet long, pinnate, terminating in a long whip-like retrorse-thorned tendril, the short petiole armed with a double or single row of short more or less sharp spines hollowed-out at inner base, saccate at base (the sac unarmed or sparingly and shortly prickly), the sheaths quite green, beset with a few excavate thorn-like protuberances or seriate large excavate flat sharp spines or occasionally quite or nearly quite unarmed (on the same plant), sometimes the spines short flat and black; the rachis armed with fascicled or simple upwardly recurved strong thorns; pinnæ alternate, broad-lanceolate, the median ones alternately approximate by twos, 1 to 2 ft. long by 3 to 5 in. broad, towards the shortly acuminate apex bristly ciliate, many-nerved and transversely veined, uniformly green; spadix bifariously decomposed, axillary, elongate, drooping; spathes tubular, with an obliquely truncate acuminate limb, glabrous, sparingly recurved-thorny, the partial spathes conform, but not so small and less armed; spathules cymbiform, the outer margin acuminate-produced, glabrous; male flowers greenish-yellow; ovary-rudiment small, 3-lobed; drupes ellipsoid-oblong, rather glossy, apiculate,





about  $\frac{1}{2}$  inch long, supported by the persistent rigid perianth; scales trapezoid, bluntish, slightly biconvex, with a faint longitudinal furrow, pale brown, with a narrow blackish brown margin; seeds almost semi-convex, grooved and irregularly wrinkled.

HAB. In the evergreen tropical forests all over Burma from Chittagong, Pegu, and Martaban down to Tenasserim and the Andaman islands. Fr. Apr. May.

This is the *yamata* of the Burmans. According to Roxburgh, its name in Chittagong is *Kora bet*.

35. *C. ANDAMANICUS*, *n. sp.*, Pls. XXVII, A and XXVIII.

A lofty scandent rattan palm, the sheathed stems as thick as the arm, the canes up to an inch in diameter, all parts almost glabrous; leaves pinnate, terminating in a whip-like recurved-thorny tendril, 6 to 8 ft. long, the petioles saccate at base, armed with short blackish thin thorns arising from tubercle-like swellings and intermixed with a few long black spines; the reddish brown sheaths covered with numerous obliquely placed seriate whorls of capillary black spines, which soon break off and leave only their bases, towards the fugaceously greyish-tomentose base furnished with reflexed broader flat black spines up to nearly an inch long and forming stronger combs; the rachis more or less depressed 5-gonous, armed beneath with reflexed paired or ternary thorns, towards the petiole also distantly short thorned along the margins; pinnæ solitary, alternate, equidistant, 2 to 2½ ft. long and up to an inch broad, linear, subulate-acuminate, along the margins and on the three principal nerves beneath distantly capillary-spiny, transversely veined, uniformly green; spadix axillary, ample, decomposed, nodding; spathes somewhat compressed-tubular, armed with strong short reflexed solitary to ternary black thorns, otherwise apparently glabrous; the partial ones unarmed, tubular and slit on one side, rather abruptly acuminate, glabrous; spathules tubular-cymbiform, closely imbricated, truncate, glabrous; flowers...; drupes distichous, numerous, supported by the somewhat enlarged perianth, elliptically-ovoid, acuminate, uniformly brown, about  $\frac{1}{2}$  inch long; scales rhomboid, crustaceous, glossy, chestnut-brown-bordered, otherwise greenish, rather flat and without furrow, at apex prolonged into a lanceolate pale brown opaque acute ciliolate membranous appendage longer than the scale itself; seed semi-convex, grooved; albumen equable.

HAB. Common in the forests all over the Andamans.

*Chowdah* of the Andamanese.

36. *C. TIGRINUS*, *n. sp.*, Pls. XXV and XXVI.

A large scandent rattan, all parts glabrous, the canes up to an inch in thickness; leaves pinnate, 4—8 ft. long, without tendril; the sheaths fearfully armed with whorls and half-whorls of broad flat sharp glossy fuscous or black spines (an inch long) variously intermixed with shorter or thinner



ones, sending out from their front a long similarly armed whip-like tendril the thorns of which are connate and those further up recurved; the petiole and lower parts of rachis similarly but less densely armed not only on the back but also along its margins; pinnæ linear, the lower ones by 2 or 3 approximate, alternate or nearly so,  $1\frac{1}{2}$  to 2 ft. long, many-nerved and transversely veined, acuminate, spinulose-ciliate, green on both sides, the midrib above and usually also the lateral nerves beneath distantly capillary-spiny; the 2 terminal pinnæ more or less connate, deeply 2-cleft; spadix ample, decomposed, nodding, tendril-bearing; spathes compressed linear-tubular, densely black-spiny; the partial spathes unarmed, tubular and much lacerating at apex; spathules tubular-cymbiform, densely imbricate, truncate, minutely brown scurvy, the one side more produced and often lacerating; flowers...; drupes ovoid-oblong, acuminate, about an inch long, black and brown variegated, 1-seeded, supported by the scarcely enlarged perianth; scales much imbricated, trapezoid, not furrowed on the crustaceous glossy pale brown rather flat back, rather broadly black-bordered and produced into a large pale-brown minutely lacerate membranous rather acute appendage; seed oblong, broadly and longitudinally ribbed.

HAB. Common in the evergreen tropical forests from the eastern slopes of the Pegu Yomah and Martaban down to Tenasserim and the Andamans. Fr. H. S.

Called *lémé* in Burma. The Andamanese name is *umdah*.

37. *C. TENUIS*, Roxb., *Fl. Ind.*, III, 780; Griff. in *Macl. Calc. Journ.*, V, 45 and *Ind. Palms*, 57, t. 193, A—C; Mart., *Palm.*, 335, t. 176, f. II, t. Z, XVIII, f. XXIV and XXV; Miq., *Fl. Ind. Bat.*, III, 118.

PL. XXXI, B.

The drupes of this species are almost ellipsoid-globular, seated on the pedicel-shaped indurated perianth, apiculate, nearly  $\frac{1}{2}$  inch long, straw-coloured; scales rhomboid, uniformly straw-coloured with a narrow whitish border, acute, almost flat, with a distinct longitudinal furrow.

HAB. Chittagong (Roxb., etc.); also Pegu (according to Martius). Fl. R. S; Fr. Apr.

According to Roxburgh, it is called *bandhari bet* in Chittagong; specimens from there in H. B. C. are marked with the native name *golob bet*.

38. *C. GRACILIS*, Roxb., *Fl. Ind.*, III, 781; Griff. in *Macl. Calc. Journ.*, V, 54 and *Ind. Palms*, 64, t. 196 — Pl. XXXI, C.

Drupe  $\frac{3}{4}$  inch long, elliptical to elliptically globular, apiculate, supported by the indurated stalk-like perianth, straw-coloured; scales trapezoid, bluntish, straw-coloured with a very narrow brownish margin, slightly biconvex with a very deep longitudinal furrow; seed irregularly wrinkled.

HAB. Forests of Chittagong (Roxb.). Fr. March.

According to Roxburgh, called *Mapoori bet* in Chittagong.



39. *C. HELFERIANUS*, *n. sp.*

Evidently a slender scandent rattan somewhat of the habit of *C. viminalis*, all parts glabrous; leaves pinnate, without tendril, the rachis thin, 3-gonous, along the convex back sparingly armed with small recurved solitary thorns; pinnae narrow-linear, alternately approximated by 2 to 4, long, acuminate, 6 to 8 in. long, towards the apex bristly ciliate, along the 2 lateral nerves above bristly and slightly so also along the midrib beneath; spadix elongate, very slender, glabrous; spathes elongate-linear-tubular, compressed, green, sparingly recurved thorny along the edges, the upper ones unarmed, the limb linear-acuminate, erect; the partial spathes shorter and truncate; spathules minute, cymbiform, remote; male flowers distichous, about  $1\frac{1}{2}$  lin. long; calyx cupular, shortly 3-toothed; corolla more than twice as long as the calyx, 3-cleft almost to the base, the lobes oblong, acute; stamens inserted at the base of the corolla; female flowers, etc. unknown.

HAB. Tenasserim (or Andamans?) (Helfer 6389).

It is apparently very nearly allied to *C. viminalis*, Bl., but the incompleteness of the material before me excludes the possibility of identifying it. It requires also comparison with *C. exilis*, Griff. (*Ind. Palms.*, 51), a species which I have not seen.

40. *C. PARADOXUS*, *n. sp.*, Pls. XXIX and XXX.

An extensive scandent rattan palm, all parts glabrous, the sheathed stems 1 to 2 in. in diameter; leaves pinnate, 5—7 ft. long, terminating in a whip-like hooked-thorny tendril, the petiole short, along with the lower part of the rachis indistinctly puberous and armed underneath and near both margins with more or less straight sharp thorns; the sheaths armed with yellowish sharp flat spines arranged in combs; pinnae 1 to  $1\frac{1}{2}$  ft. long, up to an inch broad, of a thin texture, alternating by pairs and remote, marginate, shortly acuminate and inconspicuously remotely appressed-ciliolate; male spadix bifariously decompound, ample, drooping; spathes all smooth, tubular, with a truncate shortly acuminate limb; spathules similarly shaped, but much smaller, embracing the base of the very short (1 to 3 lin. long) distichously imbricate-bracted male spikelets; bracts spreading, ovate, acute, about a line long, brown, glabrous; male flowers: calyx about a line long, deeply 3-cleft, striate; petals rigid, at base only connate, nearly  $2\frac{1}{2}$  line long, oblong, acute; stamens 6, filaments rigid, the lower part linear-oblong, longer and broader than the anthers, terminating in an inflexed thread, from which the anther is versatily suspended; ovary-rudiment hardly any; female flowers and fruits unknown.

HAB. Martaban, in the evergreen tropical forests of Palawa zeik (Toukyeghat), east of Tounghoo. Fl. Apr.

I heard this species called *Yamatha Khyeing* by the Burmans.

41. *C. GURUBA*, *Mart., Palm., ed. I, 211 et ed. II, 206 and 330, t.*





175, f. I, t. Z, XVIII, f. XX and XXI. (*C. Mastersianus*, Griff. in *Macl. Calc. Journ.*, V, 76 and *Ind. Palms.*, 84, t. 206 and 195, B, excl. fol. sub nom. *C. fasciculati*).

HAB. Frequent in leaf-shedding, especially the mixed, forests all over Burma from Chittagong and Ava down to Tenasserim. Fl. C. S.; Fr. Apr. May.

Called *Kyeing ni* in Burma.

#### Doubtful Species.

1. *C. PLATYSPATHUS*, Mart., *Palm.*, ed. I, 210 (*Dæmonorops platyspathus*, Mart., *Palms.*, 206)

Stem thin, the sheaths sparingly armed with subulate thorns and spreading bristles, in front below the membranous deciduous limb with bristle-like thorns; the rachis and petiole with straight and recurved thorns; pinnæ all equidistant, linear-lanceolate, acute, several-nerved, plaited, along with the rachis beneath sparingly and minutely rusty-villous,  $\frac{1}{2}$  to 1 ft. long, about an inch broad; male spadix  $1\frac{1}{2}$  ft. long, supradecompound, the peduncle  $1\frac{1}{2}$  inch long, compressed-terete, thorny and bristly, the rachis lax, sparingly and minutely rusty-floccose, terminating in a recurved-thorny tendril; spathes membranous, flat, persistent, linear, 2—3 in. long, sparingly aculeate or almost unarmed; male flowers about a line long; calyx campanulate; corolla twice as long, the petals lanceolate, acute (*Mart. l. c.*).

HAB. Tenasserim, Tavoy (Wall. Cat. 8610).

I have not seen this species, which (owing to the tendril-bearing spadix) is evidently a *Calamus*, and, had it not been for the unequally distant pinnules, might have been compared with *C. Guruba*.

2. *C. CONCINNUS*, Mart., *Palm.*, 332, t. 116, f. X; Walp. *Ann.* III, 483.—Pl. XX, C.

Erect or almost stemless? the rachis of the leaves (and of the spadix) rusty-tomentose, sparingly beset below with half-conical subulate straight reversed pale thorns; pinnæ 15 to 20 in. long,  $1-1\frac{1}{4}$  inch broad, almost equidistant, linear-lanceolate, subulate-acuminate, many-nerved, glossy above, with numerous transverse veins, the margins and keel above setulose; female spadix decompound; spathes coriaceous, rupturing, with small rather straight recurved thorns; secondary spathes lax membranous; spathules ring-shaped, short; calyx-lobes ovate, twice as broad as the lanceolate almost equally long corolla-lobes; drupe globular, acute, as large as a pea; scales yellowish, the lower margin broader brownish (*Mart. l. c.*).

HAB. Tenasserim, Tavoy (Wall. Cat. 8607.)

This species also is unknown to me, and the figured drupes appear to be very unripe.

3. *C. NITIDUS*, Mart., *Palms.*, 334; Walp. *Ann.*, III, 484.



Stem ? leaves rather rigid, the rachis armed with copious solitary and combined recurved thorns intermixed with smaller ones ; pinnæ  $\frac{1}{2}$  ft. long, 1 inch broad, approximate, equidistant, linear-lanceolate, glossy, marginate along the 3 nerves above and almost bristly along the border ; female spadix about 2—3 ft. long, terminating in a tendril, decomposed ; spathes produced into a membranous limb 2 in. long, at base beset with small retrorse black thorns rather thick at apex ; flowers by pairs (a male and a fertile one) ; calyx tubular, 3-toothed ; corolla lobes ovate, acute ; drupes (unripe) globular, acute ; scales chestnut-brown on the middle, with a broad pale-coloured fringed margin (*Mart. l. c.*).

HAB. Tenasserim, Tavoy (Wall. Cat. 8609).

Again a species which I cannot identify from the description only. It seems to belong in the affinity of *C. tigrinus*, etc. with fringed-appendaged scales, but has elongate spathules.

4. *C. MELANACANTHUS*, *Mart., Palm.*, 333, t. 116, f. XIII, t. Z, XXII, f. X ; *Walp., Ann.*, III, 484.—Pl. XX, B.

Scandent, the thorns all antrorse, glossy black (those of the sheaths almost whorled straight ?) those on the rachis almost solitary, scattered and short (1-3 lin. long), recurved ; pinnæ equidistant, linear, about 12—13 in. the upper ones  $\frac{1}{2}$  ft. long by 5—6 lin. broad, long acuminate, along the borders, on the midrib beneath and above and along the two lateral nerves beneath black-bristled ; female spadix decomposed, terminating in slender retrorsely aculeate tendrils ; spathes rather terete, shortly truncate, the lower ones with scattered retrorse thorns, the upper ones almost unarmed ; drupes ellipsoid, acute, 10 lin. long by 5 lin. thick ; pale yellowish, sometimes with a brown-coloured thin margin (*Mart. l. c.*).

HAB. Tenasserim, Chappedong (Wall. Cat. 8608).

A species unknown to me.

5. *C. HUMILIS*, *Roxb., Fl. Ind.*, III, 773.

Shrubby ; not scandent nor flagelliferous. Leaves lanceolar, smooth, many-nerved. Spines few, but long and strong (*Roxb. l. c.*).

HAB. Chittagong (Roxb.).

6. *C. POLYGAMUS*, *Roxb., Fl. Ind.*, III, 780 ; *Griff. in Maccl. Calc. Journ.*, V, 48, in adnot.

A most extensive scandent Rambler, canes the thickness of a common walking-stick ; spines almost whorled ; sheaths flagelliferous ; lower pinnæ in remote fascicles of 3 or 4, the upper ones single and alternate or opposite, all linear with a few bristles on the margins and nerves underneath ; male and hermaphrodite flowers on the same supra-decomposed spadix (*Roxb. l. c.*).

HAB. Chittagong (Roxb.).

*Hoodoo* bet of the natives, according to Roxburgh.





## EXPLANATION OF THE PLATES.

(All figures are of the natural size, except where the contrary is stated.)

Pl. XII. *ARECA HEXASTICHA*, Kurz. Fig. 1. plant, reduced in size; fig. 2. spadix in young fruit; fig. 3. transverse section of spadix, shewing the 6 series of flowers; fig. 4. a very young fruit with perianth; fig. 5. the same, longitudinal section, somewhat magnified.

Pl. XIII. *LIVISTONA SPECIOSA*, Kurz. Fig. 1. plant, reduced; fig. 2. a piece of the ultimate branching of the fruiting spadix; fig. 3. seed, from below; fig. 4. section of the same; fig. 5. upper part of petiole and base of leaf. (The trunk in fig. 1 is drawn too thick by nearly half a line).

Pl. XIV. *LIVISTONA SPECIOSA*, Kurz. Fig. 1. lower; fig. 2. upper part of petiole.

Pl. XV. *CORYPHA MACROPODA*, Kurz. Fig. 1. plant, reduced; fig. 2. seedling-plant, also reduced; fig. 3. fruit; fig. 4. terminal pinnæ, reduced; fig. 5. portion of petiole, reduced.

Pl. XVI. *PLECTOCOMIA MACROSTACHYA*, Kurz. Fig. 1. tail-like spike, lowest and uppermost part of it; fig. 2. a spathule with the inflorescence; fig. 3. flower; fig. 4. flower of *Plectocomia elongata*, for comparison's sake; fig. 5. flower, opened out, magnified; fig. 6. petal, from outside, magnified.

Pl. XVII. *PLECTOCOMIA MACROSTACHYA*, Kurz. Fig. 1. a portion of the leaf; fig. 2. the same, shewing spine on the under side.

Pl. XVIII. *DÆMONOROPS HYPOLEUCUS*, Kurz. Fig. 1. flowering branch, ♀; fig. 2. an ultimate branching of inflorescence, magnified; fig. 3. calyx, magnified; fig. 4. corolla, laid open, magnified.

Pl. XIX. *DÆMONOROPS HYPOLEUCUS*, Kurz. Fig. 1. portion of branch and lower part of leaf; fig. 2. terminal portion of leaf.

Pl. XX. *A. KORTHALSIA SCAPHIGERA*, Mart., from the Andamans. Fig. 1. part of fruiting spadix; fig. 2. a flowering catkin, ♀; fig. 3. drupe; fig. 4. scales of drupe, magnified; fig. 5. seed; fig. 6. the same, longitudinal section. *B. CALAMUS MELANACANTHUS*, Mart. Fig. 1. drupe, copied from Martius's work. *C. CALAMUS CONCINNUS*, Mart., copied from Martius's work. Fig. 1. fruiting branchlet; fig. 2. drupe, magnified.

Pl. XXI. *KORTHALSIA SCAPHIGERA*, Mart., from the Andamans. Fig. 1. sheath and lower part of petiole; fig. 2. young plant.

Pl. XXII. *CALAMUS ARBORESCENS*, Griff., from Pegu. Fig. 1. part of fruiting spadix; fig. 2. drupe; fig. 3. scales; fig. 4. seed, immature; fig. 5. terminal portion of the male spadix; fig. 6. male flower, somewhat magnified; fig. 7. calyx, slit open, magnified; fig. 8. corolla, with stamens, laid open, magnified; fig. 9. stamens from different views, magnified.

Pl. XXIII. *CALAMUS ERECTUS* Roxb., from Chittagong. Fig. 1. lower part of female spadix; fig. 2. portion of fruiting spadix; fig. 3. seed, with the resinous cover; fig. 4. seed, longitudinal section; fig. 5. scales.

Pl. XXIV. *CALAMUS ERECTUS*, Roxb., from Chittagong. Fig. 1. portion of male spadix; fig. 2. male flower; fig. 3. corolla with stamens, laid open, somewhat magnified; fig. 4. stamens from different views, magnified.

Pl. XXV. *CALAMUS TIGRINUS*, Kurz, from the Andamans. Fig. 1. fruiting branch of the spadix with portion of tendril; fig. 2. lower part of the basal spadix; fig. 3. drupe;



fig. 4. scales of the same, magnified; fig. 5. seed from above; fig. 6. the same, side-view; fig. 7. the same in longitudinal section, shewing the embryo at *e*; fig. 8. young fruits, from Pegu; fig. 9. scale of the same, magnified.

Pl. XXVI. *CALAMUS TIGRINUS*, Kurz, from the Andamans. Fig. 1. leaf with tendril, reduced; fig. 2. portion of petiole and sheath with tendril; fig. 3. pinnule.

Pl. XXVII. *A. CALAMUS ANDAMANICUS*, Kurz, from the Andamans. Fig. 1. portion of the fruiting spadix; fig. 2. drupe; fig. 3. scales of the same, magnified; fig. 4. the same, still more magnified; fig. 5. seed; fig. 6. the same, longitudinal section. *B. CALAMUS PASCICULATUS*, Roxb., from Burma. Fig. 7. a portion of the spadix with unripe and monstrous fruits; fig. 8. a monstrous fruit, magnified.

Pl. XXVIII. *CALAMUS ANDAMANICUS*, Kurz, from the Andamans. Fig. 1. a portion of the stem with leaf and lower part of inflorescence, much reduced; fig. 2. the same, with the lower part of the petiole; fig. 3. a pinnule.

Pl. XXIX. *CALAMUS PARADOXUS*, Kurz, from the Martaban. Fig. 1. portion of flowering male spadix; fig. 2. terminal spikelet of the same, magnified; fig. 3. a male flower, magnified; fig. 4. the same laid open, magnified; figs. 5 and 6. anthers seen from the side and front, magnified; fig. 7. leaf, reduced.

Pl. XXX. *CALAMUS PARADOXUS*, Kurz, from Martaban, 2. Fig. 1. lower portion of leaf and sheath; fig. 2. upper portion of ditto, with part of tendril.

Pl. XXXI. *A. CALAMUS LATIFOLIUS*, Roxb., from the Andamans. Fig. 1. portion of the fruiting spadix; fig. 2. drupe; fig. 3. scales of the same, magnified; figs. 4 and 5. seed seen from below and above; fig. 6. the same in longitudinal section; fig. 7. unripe fruits from Pegu; fig. 8. the same, somewhat magnified; fig. 9. scales of the same, magnified. *B. CALAMUS TENUIS*, Roxb., from Chittagong. Fig. 1. piece of fruiting spadix; fig. 2. drupe; fig. 3. scales of the same, magnified; fig. 4. seed, from above; fig. 5. the same, in longitudinal section; fig. 6. unfinished pencil sketch of drupe, copied from Roxburgh's drawings. *C. CALAMUS GRACILIS*, Roxb., from Assam. Fig. 1. lower part of spadix with leaf-sheath; fig. 2. drupe; fig. 3. seed from below; fig. 4. the same, in longitudinal section; fig. 5. scales, magnified; fig. 6. transverse section of the same.



## ON THE GENERAL THEORY OF DUPLEX TELEGRAPHY.

By LOUIS SCHWENDLER.

(Continued from page 21.)

The first part of this investigation concluded by giving the best relations between the resistances of the different branches of the Bridge Arrangement, under the limiting supposition, however, that the line used for duplex working was perfect in insulation, or more generally that the real conduction resistance of the line could be neglected against the resistance of the resultant fault.\*

It now remains, therefore, to investigate if the simple relations given are generally true; or, if not, what they become in case the line has an appreciable leakage. In fact this is clearly the case of practical importance, since all overland lines, especially long ones, even if constructed on the best known principles, will always have a very considerable leakage, *i. e.*, the resistance of the resultant fault ( $i$ ) will generally be by no means very large in proportion to the real conduction resistance ( $L$ ) of the line.

In order to obtain the best general solution of the problem, we must conduct the investigation with great caution, that is, we must be careful not to introduce beforehand any relation between the different variables, however convenient, that is not necessarily a consequence of the paramount condition to be fulfilled for Duplex Telegraphy, *i. e.*, *Regularity of Signals*.

Thus it will be seen that the present general investigation must be conducted somewhat differently from the special one given in the First Part.

It must, however, be understood from the beginning that whatever the best relations may be, which should exist between the different resistances of the Bridge Method, when used on an imperfect line, these relations must revert to the special ones given before if we put  $i = \infty$ , and this fact affords a certain check upon the correctness of the new relations to be found.

*General solution of the first problem for the Bridge Method.*

The diagram (Fig. 1) given in the First Part represents the general case, and to it therefore I shall refer in the present paper.

The general mathematical question which is to be solved for Duplex Telegraphy has been stated as follows:—

REGULARITY OF SIGNALS. *D and S are two functions which must be rigidly equal to zero when no variation in the system occurs; and which for*

\* For a definition of the terms, "resultant fault," "real conduction," "measured conduction," "real insulation," "measured insulation," &c., which will be of frequent occurrence in this paper, see my *Testing Instructions*, Part II, Section I.



any given variation in the system must be as small as possible, and approximate rapidly towards zero as the variation in the system becomes smaller and smaller.

Further these two functions  $D$  and  $S$  were expressed, say for Station (I), as follows :

$$D' = \frac{E'}{E''} \frac{N'}{N''} \frac{1}{\mu'} \frac{\Delta'}{m'' \psi'} \quad \dots \quad \dots \quad \dots \quad (III')$$

and

$$S' = E'' \frac{m''}{N''} \mu' \psi' - \frac{E' b'}{n'} + \sigma' \phi' \quad \dots \quad \dots \quad (IV')$$

These two expressions are quite general, *i. e.*, they do not as yet contain any restrictive conditions (beyond those involved by the mode of arrangement of the system of conductors) between the different variables ; and the signification of the abbreviated terms can be found from the First Part.\*

Now the first relation that we shall introduce is

$$w + \beta = f$$

for both stations, which may be called most appropriately "*the key equation*."

The introduction of this relation at the outset is quite justified, for say that  $S' = D' = 0$  is rigidly fulfilled in Station (I), when Station (I) is sending and the key in Station (II) is at rest, and suppose the electromotive force in Station (II) equals 0 (the E. M. F. of all elements annulled and only their resistance  $\beta''$  left), then, moving the key in Station (II) from its rest contact to its working contact, the regularity condition  $S' = D' = 0$  would be (*i. e.* balance in Station I) at once disturbed if  $w'' + \beta'' \neq f''$  during the motion of the key, even if no variation in the line took place. Thus it is paramount to have  $w + \beta = f$  for each station during the movement of the key.†

\* For convenience of reference I shall give here all the terms of which use will be made hereafter.

$$n = b(a + d + g + f) + (a + g)(f + d)$$

$$m = b(g + d) + d(a + g)$$

$$k = b(a + f) + a(f + d)$$

$$\psi = \frac{k}{n}$$

$$\rho = \frac{a}{n}$$

$$\alpha = b(g + d)(a + f) + ag(d + f) + fd(a + g)$$

These expressions have been obtained by the application of Kirchhoff's rules to the Bridge Arrangement as represented in Fig. 1, and they are quite general, as no other relations beyond those represented by the diagram have been introduced as yet.

† To fulfil the key equation most exactly during the movement of the key, I have constructed a key (constant resistance key) based on the following principle : During



But if for instance in Station (I)

$$w' + \beta' = f'$$

it follows that

$$\phi' = \psi'$$

Hence, substituting its value for  $\sigma'$  and reducing, we get more simply,

$$S' = \frac{E' m'}{N'} \psi' - \frac{E' b'}{n'} \dots \dots \dots (IV')$$

but as

$$\frac{m'}{N'} = \frac{b'}{k' - \frac{\Delta' n'}{m'}}$$

and

$$\psi' = \frac{k'}{n'}$$

we have

$$S' = \frac{E' b'}{n'} \left\{ \frac{1}{1 - \frac{\Delta'}{m' \psi'}} - 1 \right\} \dots \dots (IV')$$

Therefore  $S'$  approximates most rapidly† towards zero if  $\frac{\Delta'}{m' \psi'}$  does, or we have

$$\theta = \frac{\Delta'}{m' \psi'}$$

should be as small as the circumstances will allow of.

the first movement of the key (up or down stroke) a force is stored up in a spring before the contacts are changed, which force finally causes the change in these contacts; for this reason the two principal contacts of the key co-exist only for an almost infinitesimal time, the length of which is moreover independent of the signalling speed.

Thus for this key  $w + f = \beta$  is fulfilled in all positions except one, when it is  $\frac{w + \beta}{2}$ , but for such a short time that the error cannot have any disturbing influence whatever.

\*  $\psi'$  is the proportion of the total current arriving at point 1 Fig. 1, which passes off through the instrument  $g'$  when the key of Station (I) is at rest. Then  $\psi'$ , being a function of  $a', b', d', g'$ , is also a function of  $f'$ .  $\phi'$  is the proportion of the total current arriving at point 1 Fig. 1, which passes through the instrument  $g'$  when the key of Station (I) is sending, thus, besides being a function of  $a', b', d'$  and  $g'$ , it is a function of  $w' + \beta'$  instead of  $f'$ , and as  $\phi'$  and  $\psi'$  are otherwise quite similar functions they become identical if we make

$$f' = w' + \beta'$$

+  $\frac{E' b'}{n'}$  can never become zero, but should on the contrary be as large as possible,

and, therefore,  $S'$  can only approximate towards zero by  $\frac{\Delta'}{m' \psi'}$  becoming as small as possible.



Now that  $D'$  approximates also rapidly towards zero by making

$$\theta' = \frac{\Delta'}{m' \psi'}$$

as small as possible can be proved as follows:—

By definition we have

$$D' = \frac{p'}{P'}$$

Further, as  $\phi' = \psi'$  (on account of the key equation), we have

$$p' = S' \text{ invariably}$$

$$\therefore D' = \frac{S'}{P'}$$

Thus  $D'$  for any given  $P'$  approximates towards zero at the same rate as  $S'$  does, i. e., the smaller  $\theta'$  becomes.

Therefore the whole problem is actually most generally solved by making

$$\theta = \frac{\Delta}{m \psi}$$

as small as possible for both stations.

Now for Station (I), if balance in the  $g'$  branch for the outgoing current be established, we have

$$a' d' - b' c' = 0$$

where  $c'$  is the "*measured circuit*" from Station (I), and supposing that all variations in the system are chiefly due to variations in the line resistance,\* we have at once:

$$-b' \delta c' = \Delta'$$

$\delta c'$  the total variation of the line resistance may be either positive or negative, and supposing that  $\delta c'$  contains its sign we have:

$$\theta' = \frac{\delta c'}{\frac{m' \psi'}{b'}}$$

to be made as small as possible.

Now in case of the line being perfect ( $i = \infty$ )  $\delta c' = \delta L$  (a constant with respect to the different resistances of each arrangement, and which was the case in the first solution). At present however  $\delta c'$  is a function

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\* The variations in  $c'$  may be due to variations in the line, or to variations in the duplex arrangements. In the latter case they may be due either to an alteration of temperature in the station and then the effect can be only small, or to an accident (wire or connection breaking) and then the influence will become so great that nothing short of actual repairs could help. Thus practically the problem has only to be solved for variations in the line.



222 L. Schwendler—*On the General Theory of Duplex Telegraphy*. [No. 4,  
of the resistances of the two arrangements, which function must be first  
determined before we can decide what general condition makes  $\theta'$  as small  
as possible.

We have

$$c' = l' + \frac{i(l'' + \rho'')}{i + l'' + \rho''}$$

$\rho''$  being the complex resistance of Station (II).

Put  $l' = x$

and  $l' + l'' = L$

$$\therefore c' = x + \frac{i(L - x + \rho'')}{i + L - x + \rho''}$$

Now  $c'$  may vary from three essentially different causes, namely:—

1.  $x$  varies, or the position of the resultant fault alters;
2.  $i$  varies, or the resistance of the resultant fault alters;
3.  $L$  varies or the real conduction of the line alters, as may happen  
by an increase or decrease of the temperature along the whole  
length of the line, or by the occurrence of a partial discontinuity  
(imperfect joints, loose shackles, &c.).

These three causes may act separately or conjointly, and their total  
effect we can approximately get by taking the *total* differential of  $c'$  with  
respect to  $x$ ,  $i$ , and  $L$ .

$$\therefore dc' = \frac{dc'}{dx} dx + \frac{dc'}{di} di + \frac{dc'}{dL} dL$$

$$\text{or} \quad \delta c' = \frac{dc'}{dx} \delta x + \frac{dc'}{di} \delta i + \frac{dc'}{dL} \delta L \quad \text{approximately,}$$

which expression is perfectly true, however, for small variations  $\delta x$ ,  $\delta i$ ,  
and  $\delta L$ .

Now\*

$$\frac{m' \psi'}{b} = \frac{N'}{n'} + \delta c' = \rho' + c' + \delta c'$$

$$\frac{m'}{N'} = \frac{b'}{K' - \Delta'} \cdot \frac{n'}{m'}$$

$$\therefore \frac{N'}{m'} = \frac{K'}{b'} - \frac{\Delta'}{b'} \cdot \frac{n'}{m'}$$

$$\text{or} \quad \frac{K'}{b'} = \frac{N'}{m'} + \frac{\Delta'}{b'} \cdot \frac{n'}{m'}$$

$$\text{but} \quad \Delta' = b' \delta c'$$

$$\therefore \frac{K'}{b'} = \frac{N'}{m'} + \delta c' \cdot \frac{n'}{m'}$$



$$\therefore \theta' = \frac{\frac{d c'}{d x} \delta x + \frac{d c'}{d i'} \delta i + \frac{d c'}{d L} \delta L}{\rho' + c' + \delta c'}$$

But as  $\delta x$ ,  $\delta i$  and  $\delta L$  are very small, and, as neither  $\frac{d c'}{d x}$ ,  $\frac{d c'}{d i'}$ , nor  $\frac{d c'}{d L}$  can become infinite, it follows that  $\delta c'$  must be always very small in proportion to  $c'$  itself, and more so as compared with  $\rho' + c'$ .

Thus we have at last

$$\theta' = \frac{\frac{d c'}{d x} \delta x}{\rho' + c'} + \frac{\frac{d c'}{d i'} \delta i}{\rho' + c'} + \frac{\frac{d c'}{d L} \delta L}{\rho' + c'}$$

and therefore to make  $\theta'$ , for independent variations  $\delta x$ ,  $\delta i$ , and  $\delta L$ , as small as possible, each term should be made as small as possible. Now, taking  $\rho'$  and  $\rho''$  as independent variables, it will be seen that the total differential of each term is negative. Thus  $\theta'$  becomes smaller the larger  $\rho'$  and  $\rho''$  are selected, and the same of course is the case for  $\theta''$  (Station II).

Now the complex resistance of any one station can be expressed as follows:—

$$\rho^* = \frac{(a+f)(g+d)}{a+g+d+f} - \frac{(ad-gf)^2}{(a+d+g+f) \{ b(a+d+g+f) + (a+g)(f+d) \}}$$

Thus for any given sum of resistances, i. e.,  $a+f+d+g = \text{const.}$ ,  $\rho$  will be largest if

$$ad - gf = 0 \quad \dots\dots\dots \text{(VI)}$$

which is the "*immediate balance condition.*"

Now

$$\frac{m' \psi'}{b'} = \frac{K'}{b'} \cdot \frac{m'}{a'}$$

Substituting for  $\frac{K'}{b'}$  its value we get

$$\frac{m' \psi'}{b'} = \frac{N'}{n'} + \delta c'$$

but  $N' = c' n' + \alpha'$

$$\therefore \frac{N'}{n'} = c' + \frac{\alpha'}{n'}, \text{ but } \frac{\alpha'}{n'} = \rho'$$

$$\therefore \frac{N'}{n'} = c' + \rho'$$

$$\text{or } \frac{m' \psi'}{b'} = c' + \rho' + \delta c'$$

\* This expression is nothing else but the resistance of a Wheatstone's Bridge between the two battery electrodes. It is most easily obtained by the application of Kirchhoff's rules.



The fulfilment of the immediate balance condition is therefore no longer an assumption made to afford convenient and quick means of adjustment when balance is disturbed, but, as has been proved, is necessary in order to reduce the effect of any disturbance whatever to a minimum.

Supposing now the fulfilment of the immediate balance, we have

$$\rho = \frac{(g + d)(a + f)}{a + d + f + g}$$

which again has a relative maximum for

$$g + d = a + f$$

whence it follows, in consequence of equation (VI), that

$$a = d = f = g \quad \dots\dots\dots \text{(VIII)}$$

represents the general solution of the problem.

This result might of course have been anticipated from the special solution, since equation (VIII) gives only a relation between the branches, quite independently of  $i$ . It remains now to determine the magnitude of one of the branches, and to this end we have to consider the magnetic moments of the receiving instruments.

MAXIMA MAGNETIC MOMENTS. By definition we have

$$S = P - Q$$

for both stations, and as it has been proved before quite generally that  $S = 0$  if  $\Delta = 0$ , *i. e.*, if rigid balance in the station for the out-going current be established, we know at once that at or near balance the currents which in one and the same station produce single and duplex signals must be identical, and need therefore express the magnetic moment in each station for *one* current only, by presupposing balance in both the stations.

The currents which at or near balance produce the signals are

$$* G' = \frac{E''}{4} \cdot \frac{\mu'}{g'' + c'} \quad \text{in Station (I),}$$

$$\text{and} \quad * G'' = \frac{E''}{4} \cdot \frac{\mu''}{g' + c'} \quad \text{" " (II).}$$

\* For balance in Station (II) the current passing through Station (I) is

$$G' = E'' \frac{b''}{K''} \mu' \psi$$

$$\frac{K''}{n''} = \psi''$$

$$\therefore G' = E'' \frac{b''}{n'' \psi''} \mu' \psi$$

but  $\psi' = \psi''$  on account of  $a = d = g = f$  in each Station

$$\therefore G' = E'' \frac{b''}{n''} \mu'$$

$$\text{but } n'' = 4 g'' (g'' + b'')$$

and dividing by  $b''$  we get



These expressions follow from the general formulæ by fulfilling the regularity equation (VIII) for both stations, and in addition the balance conditions.

Multiplying now  $G'$  by  $\sqrt{g'}$  and  $G''$  by  $\sqrt{g''}$ , we get

$$P' = \frac{E''}{4} \cdot \frac{\sqrt{g'}}{g'' + c''} \mu'$$

$$P'' = \frac{E'}{4} \cdot \frac{\sqrt{g''}}{g' + c'} \mu''$$

the magnetic moments of the two instruments in Nos. (I) and (II) Stations respectively; and, considering that\*

$$\frac{\mu'}{g' + c''} = \frac{\mu''}{g' + c'} = \frac{i}{Q}$$

where  $Q = (g' + l')(g'' + l'') + i(g' + g'' + l' + l'')$ , we may write the two above expressions as:—

$$P' = \frac{E''}{4} \cdot \frac{Q}{i} \sqrt{g'}$$

$$P'' = \frac{E'}{4} \cdot \frac{i}{Q} \sqrt{g''}$$

The first expression has clearly an absolute maximum with respect to  $g'$ , and the second with respect to  $g''$ , but these two maxima cannot be simultaneously fulfilled, and do not therefore represent a solution in this particular case. But if we consider that during a *duplex* signal both the instruments  $g'$  and  $g''$  are in circuit, while during a *single* signal, though not both the instruments yet certainly their equivalent in resistances are in circuit, it will be clear why simultaneous maxima of the two single expressions are *not* possible. It represents simply the more general case to which the question belongs of making the magnetic moments of two instruments, connected up in the same single circuit, maxima. In this case it is well known we can do nothing more than make the sum of the magnetic moments a maximum, and here therefore we must do the very same.

Adding then we get

$$P = P' + P'' = \frac{i}{4} \frac{E'' \sqrt{g'} + E' \sqrt{g''}}{Q}$$

$$G' = \frac{E''}{4} \cdot \frac{\mu'}{g'' + \frac{g'^2}{l'}}$$

but  $g''^2 = l'' c''$  on account of balance in Station (II)

$$\therefore G' = \frac{E''}{4} \cdot \frac{\mu'}{g'' + c''}$$

\* This can be easily shewn by substituting for  $\mu'$ ,  $\mu''$ ,  $c'$  and  $c''$  their actual values.



226 L. Schwendler—*On the General Theory of Duplex Telegraphy*. [No. 4,  
which expression has a maximum with respect to both  $g'$  and  $g''$  considered  
as independent variables, and such indeed according to the nature of the  
problem they really are.

Thus, differentiating  $P$  with respect to  $g'$  and  $g''$ , we get

$$\frac{dP}{dg'} = Q - 2 \sqrt{g'} \left\{ \sqrt{g'} + \frac{E'}{E''} \sqrt{g''} \right\} \frac{dQ}{dg'} = 0$$

and

$$\frac{dP}{dg''} = Q - 2 \sqrt{g''} \left\{ \sqrt{g'} + \frac{E''}{E'} \sqrt{g''} \right\} \frac{dQ}{dg''} = 0$$

But as the same kind of instruments are employed in both the stations,  
we require evidently also the same force in both to produce the signals, no  
matter what the state of the line may be.

Thus we must put\*

$$P' = P''$$

or

$$\frac{E''}{4} \frac{\sqrt{g'}}{Q} = \frac{E'}{4} \frac{\sqrt{g''}}{Q}$$

$$\therefore \frac{E''}{E'} = \frac{\sqrt{g''}}{\sqrt{g'}}$$

Substituting this value for the proportion of the E. M. F., we get

$$Q - 4g' \frac{dQ}{dg'} = 0$$

and

$$Q - 4g'' \frac{dQ}{dg''} = 0$$

but

$$\frac{dQ}{dg'} = g'' + l'' + i$$

and

$$\frac{dQ}{dg''} = g' + l' + i$$

Substituting these values in the above equations and reducing; and,  
further, dividing the first equation by  $l' + i$  and the second by  $l'' + i$ , we  
get at last

$$l'' + \frac{i l'}{i + l'} + g'' - 3 g'' \left( 1 + \frac{g''}{l'' + i} \right) = 0$$

and

$$l' + \frac{i l}{i + l''} + g' - 3 g' \left( 1 + \frac{g'}{l' + i} \right) = 0$$

---

\* This supposition in the case of a perfect line is fulfilled by itself, since then the  
two instruments are not only of the same kind, but absolutely identical.



$$\text{Put } l'' + \frac{i l'}{i + l'} = L'' \quad \text{measured conduction from Station (II),}$$

$$\text{and } l' + \frac{i l''}{i + l''} = L' \quad \text{measured conduction from Station (I).}$$

Thus, the two equations which determine the absolute magnitude of  $g'$  and  $g''$  respectively, are

$$L' + g' - 3 g' \left( 1 + \frac{g'}{l' + i} \right) = 0$$

and

$$L'' + g'' - 3 g'' \left( 1 + \frac{g''}{l'' + i} \right) = 0$$

from which  $g'$  and  $g''$  can be expressed, namely,

$$g' = -\frac{1}{3} q' + \frac{1}{3} \sqrt{q' (3 L' + q')} \quad \dots\dots\dots (X')$$

and

$$g'' = -\frac{1}{3} q'' + \frac{1}{3} \sqrt{q'' (3 L'' + q'')} \quad \dots\dots\dots (X'')$$

where

$$q' = i + l'$$

and

$$q'' = i + l''$$

Supposing now  $i = \infty$ , or the insulation perfect, we have  $L' = L'' = L$ , and

$$g' = g'' = g = \frac{L}{2}$$

the former *special* solution.

But so long as  $i$  is not infinite,  $L'$  and  $L''$  may be different from each other; and, therefore, also  $g'$  different from  $g''$ , and, further,

$$g' = \frac{L'}{2}$$

and

$$g'' = \frac{L''}{2}$$

will be somewhat too large. These values will, however, represent a very close approximation in the case of any line in tolerably good electrical condition; and, as a line worked *duplicè* represents two lines, it can be always afforded to select the best sections, when the above values for  $g'$  and  $g''$  will be sufficiently correct for all practical purposes, especially if it be remembered that when once  $g'$  and  $g''$  have been fixed, they cannot be easily altered, and that, therefore,  $L'$  and  $L''$  must be invariably certain averages, either for the whole year or for certain seasons. This, however, belongs more to the practical application than to the theory of Duplex Telegraphy.



The resistance of the  $b$  branch in each station can now be easily calculated from the balance equations and the values given for  $g'$  and  $g''$ .

The value of the  $b$  branch must be calculated to enable us to ascertain that *maximum* part of  $b$  which will have to be made variable in increments for the purpose of adjusting balance, and to this interesting question we shall revert further on.

The general solution of the problem might now be considered complete, if it were not for the currents which produce the signals, of which we do not know as yet with certainty that we have the maxima in the solution given above. It must, however, be understood that this solution represents the *only true one* from our physical point of view, and that, if it should not be identical with that giving the maxima currents, when considered generally by themselves from the beginning, the solution would not be thereby invalidated; but only the duplex method in question would prove to be not quite so perfect as could be desired. The sequel, however, will shew that the relation  $a = d = g = f$  represents also the maxima currents that are possible under the circumstances. As this investigation is of great importance in forming a correct opinion of the value of the method, it will be fully gone into.

**MAXIMA CURRENTS.** When considering the question of currents, for any telegraphic circuit, the two conditions which invariably should be fulfilled are:

*Firstly*.—Greatest possible constancy of current.

*Secondly*.—Maximum current.

How far these two conditions can be fulfilled simultaneously, depends clearly on the special circuit and the special arrangements adopted; but so much is certain, that from a practical point of view, the first condition (constancy of current) will always be of far greater importance than the second, inasmuch as the required strength of currents can be obtained by employing cells, efficient in kind, sufficient in number, and properly arranged to suit requirements.

Thus in our case, when we consider the currents which produce the signals in Duplex Telegraphy, before going to the condition of maximum current, we must ascertain first the condition of *greatest possible constancy* of current.

Now it has been proved before that *immediate balance* in each station is requisite in order to make the effect of any disturbance on the receiving instrument as small as the circumstances will allow of. But as these disturbances were considered with respect to *one* and the *same* instrument, *i. e.*, independently of the magnetic moment, these disturbances are then simply due to the disturbances in the signalling current; from which it follows at once that the fulfilment of the *immediate balance* condition is required also



in order to have the *greatest possible constancy* in the signalling current. Thus when investigating the question of maxima currents we are justified in presupposing the rigid fulfilment of the immediate balance for both stations, *i. e.*,

$$ad - gf = 0$$

Further, as it has been shewn before that the fulfilment of the regularity condition

$$a = d = g = f$$

for both stations does make the effect of the disturbances still *smaller*, we have only to investigate the current at balance, and to show that the condition of maximum current becomes identical with the regularity condition, whence it would follow that the duplex method under consideration is perfect in every conceivable respect.

The question to be solved stands, therefore, as follows:—

*Two signalling currents, the expressions of which are known, have to be made simultaneous maxima, while the different variables are linked together by four condition equations.*

Thus 
$$G' = E' \frac{b'}{k'} \mu' \psi'$$

the current which produces single and duplex signals in Station (I).

$$G'' = E'' \frac{b''}{k''} \mu'' \psi''$$

the current which produces single and duplex signals in Station (II).

1.	$a' d' - b' c' = 0$	} Condition equations.
balance in ( $g'$ ) Station (I).		
2.	$a'' d'' - b'' c'' = 0$	
balance in $g''$ Station (II).		
3.	$a' d' - g' f' = 0$	}
4.	$a'' d'' - g'' f'' = 0$	
immediate balance in both stations.		

Now  $c'$  is a function of  $\rho''$ , but on account of equation (4)  $\rho''$  is independent of  $b''$ , thus  $c'$  is also independent of  $b''$ ; in the same way it follows that  $c''$  is independent of  $b'$ ; thus  $b'$  and  $b''$  can be explicitly expressed at once, and from the four condition equations we have

$$b' = \frac{a' d'}{c'}$$

$$b'' = \frac{a'' d''}{c''}$$

$$f' = \frac{a' d'}{g'}$$

$$f'' = \frac{a'' d''}{g''}$$



230 L. Schwendler—*On the General Theory of Duplex Telegraphy*. [No. 4, and, substituting these values in the expressions for  $G'$  and  $G''$ , we get

$$G'^* = E' i \cdot \frac{a' g''}{\{c''(a'' + g'') + a''(g'' + d'')\} \{q'(a' + g') + a'(g' + d')\}}$$

$$G''^* = E' i \cdot \frac{a'' g'}{\{c'(a' + g') + a'(g' + d')\} \{q''(a'' + g'') + a''(g'' + d'')\}}$$

where

$$q' = i + l'$$

$$q'' = i + l''$$

Put

$$\frac{g''}{g'} = k$$

and substitute in the first expression

$$g'' = k g'$$

in the second

$$g' = \frac{g''}{k}$$

when we get

$$G' = E' i k \cdot \frac{a' g'}{\{c''(a'' + g' k) + a''(d'' + g' k)\} \{q'(a' + g') + a'(g' + d')\}}$$

$$G'' = E' i \cdot \frac{a'' g''}{\{c'(g'' + a' k) + a'(g'' + d' k)\} \{q''(a'' + g'') + a''(d'' + g'')\}}$$

Now it will be seen that  $G'$  has clearly a maximum with respect to  $g'$ , while  $G''$  has a maximum with respect to  $g''$ ; thus, if we take  $g'$  as the only variable in  $G'$  ( $k$  constant) and differentiate with respect to  $g'$ , we get

$$\frac{d G'}{d g'} = 0$$

and, if we take  $g''$  as the only variable in  $G''$  and differentiate, we get

$$\frac{d G''}{d g''} = 0$$

\* If in these two expressions we put

$$i = \infty$$

and remember that then

$$a' = a'' = a$$

$$d' = d'' = d$$

$$g' = g'' = g$$

and

$$c' = c'' = L + \rho$$

while

$$\rho = \frac{a(g + d)}{a + g}$$

we get

$$G' = G'' = G = E \frac{a g}{\{L(a + g) + 2 a(g + d)\} \cdot (a + g)}$$

the expression of the current which produces the signals (single and duplex) through a perfect line, as was given in the first part of this investigation (p. 19).



1874.] L. Schwendler—*On the General Theory of Duplex Telegraphy.* 231

These two equations must be fulfilled simultaneously in order to have the simultaneous maxima of the two currents in question.

Executing the differentiation, and re-substituting for  $k$  its value  $\frac{g''}{g'}$ , we get after reduction

$$a' a'' (c'' + d'') (g' + d') - g' g'' (a' + g') (a'' + c'') \\ - g' (a'' + g'') \left\{ (g' (a' + g') + a' (g' + d')) \right\} \frac{d c''}{d g'} = 0$$

and

$$a' a'' (c' + d') (g'' + d'') - g' g'' (a'' + g'') (a' + c') \\ - g'' (a' + g') \left\{ g'' (a'' + g'') + a'' (g' + d'') \right\} \frac{d c'}{d g''} = 0$$

while

$$\frac{d c''}{d g'} = \frac{i^2}{(g' + p')^2} \cdot \frac{a' (a' - d')}{(a' + g')^2} \\ \frac{d c'}{d g''} = \frac{i^2}{(g'' + p'')^2} \cdot \frac{a'' (a'' - d'')}{(a'' + g'')^2}$$

Now the terms in the two equations which have  $\frac{d c''}{d g'}$  and  $\frac{d c'}{d g''}$  for factors become independently zero, the first for  $a' = d'$ , and the second for  $a'' = d''$ ; and, substituting these values for  $d'$  and  $d''$  in the other two terms, both become zero for

$$a' a'' - g' g'' = 0$$

whence it follows that

$$a' - d' = 0 \\ a'' - d'' = 0 \\ a' a' - g' g'' = 0$$

is one of the simultaneous solutions of the two equations.\*

Thus, substituting for  $d'$  its value  $a'$ , and for  $d''$  its value  $a''$ , we get

$$G' = E'' i \frac{a' g''}{(c'' + a'') (a'' + g'') (a' + g') (a' + q')}$$

$$G'' = E' i \frac{a'' g'}{(c' + a') (a' + g') (a'' + g'') (a'' + q'')}$$

The first equation has clearly a maximum with respect to  $a'$ , and the second with respect to  $a''$ , namely

$$\frac{d G'}{d a'} = 0, \text{ which gives } a' = g',$$

and

$$\frac{d G''}{d a''} = 0, \text{ which gives } a'' = g''.$$

---

\* The other solutions which are possible from a mathematical point of view are however impossible with respect to the physical problem, for the quantities being all electrical resistances must be taken with the same sign, say positive.



Thus it follows generally that  $a = d = g$  represents a maximum of the currents, and this, in consequence of the immediate balance, gives at last

$$a = d = g = f$$

the known regularity condition, which thus has also to hold good in order to make the two currents  $G'$  and  $G''$  simultaneous maxima.

The *first problem* for the Bridge Method has therefore now been generally solved, and the results are expressed by the following formulæ :

$$a = d = f = g = w + \beta$$

$$g = H \left( \sqrt{1 + \frac{L}{H}} - 1 \right)$$

where 
$$H = \frac{q}{3} = \frac{l + i}{3}.$$

When the insulation is perfect ( $i = \infty$ ) the results revert to those originally obtained in the special solution, *viz* :—

$$a = d = f = g = w + \beta$$

$$g = \frac{L}{2}$$

$$b = \frac{L}{6}$$

It will be clear that the given solution fulfils the following conditions which are necessary and sufficient to place Duplex Telegraphy on a par with Single Telegraphy.

i. *Any variation in the resistance of the line has the least possible disturbing effect on the receiving instrument.*

ii. *Any disturbance can be eliminated by a single adjustment in the  $b$  branch without disturbing balance in the distant station.*

iii. *Maximum magnetic moment of the receiving instrument.*

iv. *Maximum current.*

There seems to me to be no other method that can fulfil all these conditions simultaneously, and the "*double balance*"\* method must therefore be pronounced perfect in every conceivable respect. I am convinced that if the general problem of duplex working were investigated by means of the Variation Calculus, the *double balance* method would come out as the *final* and *only* solution.†

\* I have called this method the "*double balance*" method, since there are two balances to be fulfilled in each station, namely, balance in the  $b$  branch for the arriving current and balance in the  $g$  branch for the outgoing current.

† The double balance method was introduced on one of the important Bombay-Calcutta main lines in June last. Since then this duplex method has been working so satisfactorily and with such regularity and speed, even during the worst time of the





## ADDENDUM.

## HISTORICAL.

When reading this paper before the Asiatic Society on the 4th February 1874, and, further, when editing the First Part for publication in the Journal of the Society, I was unacquainted with the fact that a most complete history of Duplex Telegraphy had been published by Dr. Karl Eduard Zetzsche\* (Leipzig 1865). According to Professor Zetzsche,† the Bridge Method of Duplex Telegraphy was already invented in 1863 by Maron, a Prussian Telegraph Inspector; and Dr. Zetzsche very truly remarks that the Bridge Method would seem to be that least affected by variations in the resistance of the line. To this, from an historical point of view, most valuable book, I refer the reader. It is to be hoped that an English translation of it may soon be published.

year (South-West monsoon)—when necessarily the insulation as well as the inductive capacity of lines are so enormously variable, that about its thorough practicability no doubt can be entertained, and Col. Robinson, Director General of Telegraphs in India, has consequently decided to introduce this duplex method also on the other long main lines of India.

At present the apparatus for the Bombay-Madras line (worked direct 800 miles) is almost finished, and the apparatus for Calcutta-Rangoon is under manufacture.

The Calcutta-Bombay main line is worked duplicè with Jabalpur only in translation; distance between Calcutta and Jabalpur 850 miles: distance between Jabalpur and Bombay 640 miles. The wire is almost throughout No.  $5\frac{1}{2}$  B. W. G. (diam. =  $5\frac{1}{2}$  m. m.)

This experiment, made on such a large scale and under the most unfavorable meteorological conditions, has proved most conclusively the practicability of the *double balance* method, which certainly will invariably succeed on any line where single telegraphy is possible.

\* Die Copiertelegraphen, die Typendrucktelegraphen, und die Doppel Telegraphie, ein Beitrag zur Geschichte der electrischen Telegraphie, von Dr. Karl Eduard Zetzsche, Leipzig 1865.

† Page 125 in the work quoted.

(To be continued.)



LIST OF CHIROPTERA INHABITING THE KHASIA HILLS, WITH DESCRIPTION  
OF A NEW SPECIES.—By G. E. DOBSON, B. A., M. B., F. L. S.

To Major H. H. Godwin-Austen we chiefly owe our knowledge of the fauna of these little known hill tracts, and the following list has been almost altogether made out from his collections presented to the Indian Museum. Most of the species were new, or Himalayan forms, while one is a well known European bat.

FAM. RHINOLOPHIDÆ.

1. RHINOLOPHUS LUCTUS, Temm.

This species has never, so far as I know, been found in the plains. Indeed all the species of this genus appear to be fond of elevated lands far from human habitations. The genus *Rhinolophus* is the only genus of this large family represented in the colder latitudes, and both species of leaf-nosed bats found in England belong to it. The fur of all the species is remarkably long and dense, evidently in relation to the temperature they live in. In this respect they contrast remarkably with the species of the allied genus, *Phyllorhina*, which are almost confined to the plains and low hill ranges of the tropical and sub-tropical parts of the Eastern Hemisphere.

2. RH. YUNANENSIS.

*Rh. Yunanensis*, Dobson, J. A. S. B., 1872, p. 336.

? *Rh. larvatus*, Milne-Edwards (non Horsfield), Mammif. du Tibet, 1872, p. 248.

Milne-Edwards' species is most probably identical with this, which will probably be found generally distributed throughout the Himalayas and adjoining mountain ranges. A dried specimen in the Indian Museum from Tupai Mukh, collected during the Lushai expedition, belongs to this species.

3. PHYLLORHINA ARMIGERA, Hodgson.

This fine species, first discovered by Mr. Hodgson in Nipal, is almost the only hill-dweller among numerous and widely distributed species of the genus. It is alone surpassed in size by the African *Ph. Commersonii* (*Macronycteris gigas*, Gray), and is the largest Asiatic leaf-nosed bat yet discovered. It extends along the Himalaya into China, and has been found by Mr. Swinhoe at Amoy.

The Khasia Hills are a new locality for this species.

4. PH. LEPTOPHYLLA, n. sp.

Ears rather large, broad and triangular with subacute tips, the outer margin slightly concave beneath the tip. The upper transverse nose-leaf



1874.] G. E. Dobson—*On the Chiroptera inhabiting the Khasia Hills.* 235

small, upper edge simple, narrower than the horse-shoe portion, thin, the three vertical folds in front faintly discernible at base only: the horse-shoe with a small incision in the centre of its front free edge: frontal pore small, placed at some distance behind the transverse nose-leaf.

Wing-membranes from the tibia a short distance above the ankle; interfemoral membrane triangular, the extremity of the tail projecting. Fur and integuments dark throughout.

This species belongs to the same section\* of the genus as *Ph. armigera* from which it is distinguished by its considerably smaller size; by the upper transverse nose-leaf being simple, not lobed above as in that species, and by the incised front edge of the horse-shoe which in *Ph. armigera* is invariably plain.

The specimen from which the above description is taken is an adult male preserved in alcohol, obtained in the Khasia Hills by Major H. H. Godwin-Austen and sent by him to the Indian Museum.

#### 5. *PH. LARVATA*, Horsfield.

The Indian Museum possesses specimens of this species from the Khasia Hills collected by the late Lieut. Bourne. They differ remarkably in the colour of the fur from the Javanese and Burmese forms. Those from the Khasia Hills are usually very dark without the least reddish tinge; in one specimen, however, an old male with greatly enlarged glandular elevations between the eyes, the fur has a very distinct orange tinge throughout.

#### 6. *PH. FULVA*, Gray.

This appears to be the most widely distributed species of the genus. It varies remarkably in the colour of the fur and size of the ears, and has consequently received nearly as many names as those of the different countries it inhabits.

### FAM. *VESPERTILIONIDÆ*.

#### 7. *VESPERUS PACHYOTIS*.

*Vesperus pachyotis*, Dobson, P. A. S. B., 1871, p. 211.

This remarkable species, readily distinguished by its peculiar fleshy ears, has not been recorded from any other locality. The original description was taken from two adult specimens, a male and female, preserved in alcohol in the Indian Museum.

#### 8. *VESPERUGO (PIPISTRELLUS) IMBRICATUS*, Horsfield.

This is the commonest bat in India where it takes the place of the European Pipistrelle. Specimens vary much in size according to age and locality; the form of the teeth, especially of the incisors, is also very varia-

\* *Glossonycteris*, Gray.



236 G. E. Dobson—*On the Chiroptera inhabiting the Khasia Hills*. [No. 4, ble, and consequently the species has received a great number of different names.

9. *VESPERUGO (PIPISTRELLUS) AUSTENIANUS*.

*Pipistrellus Austenianus*, Dobson, P. A. S. B., 1871, p. 213.

Major Godwin-Austen has lately sent another specimen of this species which is readily known by its broad straight tragus, and intensely black integuments and fur. *P. affinis*, Dobson, from Yunan, is very close to this species, but there are nine vertebrae in the tail compared with seven in *P. Austenianus*, the tragus is narrower, and the colour of the fur light brown.

10. *NYCTICEJUS ORNATUS*, Blyth.

This peculiarly marked bat is the nearest representative of the American genus *Atalapha* (= *Lasiurus*). It is common in the warm valleys about Darjeeling and Dr. J. Anderson found it in the Kakyan Hills, Yunan.

11. *BARBASTELLUS COMMUNIS*, Gray.

I can discover no difference between the specimen sent by Major Godwin-Austen and specimens of the common European Barbastelle. It appears to be common in the Himalayas. Specimens have been sent from Māsuri by Captain Hutton, and from Simla by Moulvie Ataor Ruhman; those from Simla are preserved in the Indian Museum.

It may be confidently expected that the following species which are generally common in the surrounding countries will be found in the Khasia Hills, namely—*Pteropus medius*, Temm.; *Cynopterus marginatus*, Geoff.; *Cynonycteris amplexicaudata*, Geoff.; *Megaderma lyra*, Geoff.; *Rhinolophus affinis*, Horsf.; *Rh. Garoensis*, Dobson; *Phyllorhina diadema*, Geoff.; *Ph. speoris*, Schr.; *Taphozous saccolaimus*, Temm.; *T. melanopogon*, Temm.; *Vespertilio formosus*, Hodgson; *Kerivoula picta*, Pallas; *K. Hardwickii*, Gray; *Vesperugo annectens*, Dobson; *Vesperus (Tylonycteris) pachypus*, Temm.; *Nycticejus Temminckii*, Horsf.; *N. Tickelli*, Blyth; *Murina harpia*, Pallas; and *M. cyclotis*, Dobson.



DESCRIPTIONS OF NEW SPECIES OF CHIROPTERA FROM INDIA AND  
YUNAN.—By G. E. DOBSON, B. A., M. B., F. L. S.

PHYLLORHINA BRACHYOTA, n. sp.

Ear comparatively small, as broad as long, inner margin very convex forwards, outer margin slightly concave beneath the tip; nose-leaf as in *Ph. larvata*, Horsf., front surface of upper transverse portion with three very distinct vertical ridges; frontal pore small, indistinct, not larger than that of the females of *Ph. larvata*.

Feet small: wing-membrane from the metatarsus near the base of the toes. Interfemoral membrane rather large, triangular behind; extreme tip of tail free.

Fur, above, light brown at base, the terminal third of the hairs very dark, the extreme tips paler: beneath similar but somewhat paler. The fur on the shoulders and along the spine darker. Ears and wing- and interfemoral-membranes very dark known. Specimens in colourless alcohol appear very dark brown throughout.

The second upper premolar is separated from the canine by a wider interval than usual in this genus; in the midst of this space, but rather to the outside, the small, scarcely distinguishable first premolar is placed.

Length, head and body 1"·95 inches; tail 1"·4; head 0"·75; ear (anteriorly) 0"·5; forearm 1"·75; thumb 0"·25; second finger 2"·7; fourth finger 2"·1; tibia 0"·72; calcaneum 0"·4; foot and claws 0"·3.

The above description is taken from an adult male, preserved in alcohol, obtained by Staff Surgeon F. P. Staples in Central India, and presented by him to the Museum of the Army Medical Department at Netley.

VESPERTILIO MONTIVAGUS, n. sp.

Crown of head very slightly elevated; muzzle obtuse: ears narrow, tapering, with rounded tips; outer side flatly emarginate immediately beneath the tip for about quarter its length, then slightly convex, and lower down, opposite the base of the tragus with a small emargination, terminating beyond this in a small rounded lobe; inner margin convex for two-thirds its length, then forming a straight line to the tip; tragus long, narrow, and acutely pointed; inner margin straight, outer slightly convex upwards with a small rounded lobe at the base.

Feet very small, toes two-thirds the length of the whole foot. Tail wholly contained within the interfemoral membrane. Wings from the base of the toes.



Fur, above, dark-brown, the extreme tips paler and shining; beneath much darker, almost black for three-fourths the length of the hairs, the remaining portion ashy. In front the face is everywhere densely covered, the long hairs concealing the eyes and leaving the tip of the nose alone naked: on each side of the muzzle two or three small glandular wart-like elevations may be seen through the hairs. The ears are quite naked anteriorly, posteriorly their bases only are covered. On the wing-membrane the fur of the back extends as far as a line drawn from the junction of the proximal and middle thirds of the humerus to the commencement of the distal third of the femur: on the interfemoral membrane it ceases abruptly at the end of the second caudal vertebra. Beneath the fur extends upon the wing-membrane as far as a line drawn from the elbow to the knee-joint; the interfemoral membrane is covered at the root of the tail, and three fourths of the remaining part is very thinly clothed with the short hairs arising from the transverse dotted lines.

Incisors, on each side, parallel and acutely pointed; inner incisors longest, with a small acutely pointed talon near their extremities on the outer side. In the lower jaw the second premolar is small but distinctly visible, standing in the tooth-row; in the upper jaw the space between the canine and third premolar is small, and the second premolar is very minute, placed interiorly, in the angle between the first and third premolar, and with difficulty distinguishable even with the aid of a lens.

Length, head and body 1"·8 inches; tail 1"·6; head 0"·65; ear 0"·58; tragus 0"·25; forearm 1"·5; thumb 0"·25; second finger 2"·7; fourth finger 1"·9; tibia 0"·6; foot and claws 0"·3.

Habitat.—Hotha, Yunan.

The above description is taken from adult male and female specimens preserved in alcohol, obtained by Dr. J. Anderson during the Yunan Expedition, and deposited in the Indian Museum, Calcutta.



## SOME ORNITHOLOGICAL NOTES AND CORRECTIONS.

By W. EDWIN BROOKS, C. E.

(Received August 25th, read Nov. 4th, 1874).

## TINNUNCULUS PEKINENSIS, Swinhoe.

I obtained a mature male, a young male in changing plumage, and an adult female of this species, in April last, near Dinapore. They were, with many others, hovering over the cleared *paddy* land close to the line of railway.

*T. cenchris*, Naum., it will be remembered, is distinct from the Indian and Chinese species.

## ACCIPITER VIRGATUS, Temm.

J. A. S. B., 1872, p. 73.

Mr. Hume saw the specimen procured in Cashmere by Capt. Cock, and pronounced it to be an old male of *Ac. nisus*, Lin.; in which I believe him to have been correct.

## AQUILA BIFASCIATA, Gray and A. ORIENTALIS, Cab.

With the addition of Mr. Anderson's specimens, I have now eight of the latter species. Four are marked as males, as indeed their small size indicates; the average length of the wing in these is 20.09 inches. Of four males of *A. bifasciata*—the first four I met with—the average of the wing is 20.62 inches, or a trifle more than half an inch difference, which is quite a trifling one for so large a bird as an eagle. The sexing of one of the four females is certainly incorrect: this bird has a wing only 20.75 long: one of the males has the wing 20.50: showing a difference of only 0.25 in. between male and female, which, in an eagle of this size, is far too small; there should have been a difference of 1.50 in. at least. Between the four males and four females of *A. bifasciata* there is an average difference of 2.63 inches; I, therefore, need only contrast the males of each as regards size, using for this purpose only this series of eight of each which I have before me.

One of the objections to my identification of *Aq. orientalis* with *A. bifasciata* was the alleged larger average size of the latter—a question which must be left open till a reliable series of the European bird can be obtained, *i. e.*, reliable as regards sex. The European birds were mostly obtained from the dealer Moeschler of Dresden, and there is much doubt about the specimens marked as females, for they approach the males too closely in size.

The other point of supposed difference was the darker tone of plumage of the European bird. With regard to this, I find that the Indian species is quite as dark. In fact, in the series now before me, the balance of darkness



of colour is decidedly on the side of the Indian birds. The European ones, which are spring and summer birds, are more faded. The question of colour may, therefore, be dismissed at once, for in this respect the two species correspond as closely as could be desired, but that of comparative size must stand over till a good series of the European bird is obtained, and for such a series to possess any value the sexes of the birds should have been determined by a naturalist, and not by a mere dealer.

For the present, then, I adhere to my conclusion that the two species are identical; each one having the peculiar buff patch at the back of the head, the strongly banded wings when immature, and a tail barred in precisely the same way—all very strong points in favour of absolute identity.

#### AQUILA HASTATA, Lesson.

This species is said by Mr. Dresser to differ from the species found in North Europe, in the plumage of the young bird. The adults are said to correspond.

I have two specimens in their first plumage, taken from the nest at Saharunpore, and the following is a description of them.

Irides dark brown; bill black, but lead-gray towards base; cere and gape bright yellow; feet a dull yellow; claws black. Above, dark hair-brown; this dark brown is shaded into quite a brownish-grey on the lower half of the back and upper tail-coverts, the feathers of this lighter portion being dark-shafted; upper tail-coverts barred with white on their outer webs; from top of head and down to nape of neck the feathers are tipped with small fulvous spots; scapulars, ridge and bend of wing, and most of the lesser wing-coverts tipped with fulvous spots of larger size; median wing-coverts similarly pale-tipped, with the lower row having the spots considerably larger (about  $\frac{1}{2}$  in. in length): this row of large spots presents the appearance, at a little distance, of a first and slight wing-bar; greater coverts all broadly tipped with dull fulvous white, presenting the appearance of a second and strong bar on the wing; secondaries and tertials broadly edged with greyish-white shaded off into the darker portion of the feather, and these light ends form the third bar on the wing; the dark portion of the wing-coverts and scapulars is of the same dark hair-brown as the back; primaries uniform black and unbarred; secondaries brown, profusely barred with hoary-grey on both webs; the greyish-white ends to the tertials are very broad; cheeks and side of head brown of a paler shade than the top of the head and streaked very faintly with darker; tail-feathers dark brown, tipped broadly with greyish-white, and barred with greyish on both webs; these bars are nearly square to the shaft (Mr. Anderson's young example has not, however, any indication of bars on the tail, except on the two outer feathers, and these nearly obsolete bars are con-



fined to the inner webs); chin, throat, and breast are brown of a shade lighter than the head and upper back and gradually becoming paler lower down, till it passes into dingy fulvous on the lower abdomen and under tail-coverts; from the top of the breast to lower abdomen the feathers have central and terminal stripes of fulvous, the stripes increasing in size towards the legs; the feathers of the lower tail-coverts are slightly, but broadly, barred with pale brown, and the shaft portion forms also a longitudinal brown streak; the appearance of the tail from below is brown, darkest towards the basal portion, and barred profusely with whitish grey; tibial plumes lightish brown spotted with fulvous; tarsus fulvous, indistinctly streaked with pale brown. The primaries, though apparently barless, are, especially the inner ones, when seen from below, obsoletely barred on the inner web. One specimen is much less spotted than the other on the upper portion of the wing, most of the lesser coverts being plain brown, and the small spots being almost confined to the vicinity of the bend of the wing and to its ridge.

Mr. Dresser has promised me an immature bird of the European form for comparison, the result of which will be communicated hereafter.

#### AQUILA FULVESCENS, Gray and Hardw.

For the last three years no additional examples of this rare eagle have been procured. The African species, *Aquila nœvioides*, Cuv. with which our bird has been confounded, is, I find, subject to some variation as regards the tail. In my remarks on this species (P. A. S. B., 1873, pp. 173-175), I noted the strongly barred tail of the example then before me. Mr. Anderson has since lent me another South African example, a fine adult bird, which is in the moult; in it both *old* and *new* tail-feathers are hoary-greyish-brown, and the indications of bars so faint as to be only perceptible in certain lights. It would thus appear that only some individuals have the tail well-barred like the common Indian *Aquila Vindhiana*, and, consequently, that a barred tail may not always be one of the characteristics of the species. I may note that I have a single example of *Aquila Vindhiana* with an absolutely plain tail; but of the hundreds that I have seen, all, with this single exception, had well-barred tails.

The body plumage of this second example of *Aq. nœvioides* above referred to is of two colours: all the old feathers are light sandy-coloured, while the new ones are foxy-red: the lesser and median wing-coverts, and also the scapulars, are a mixture of purplish-brown of different shades and rufous; the rufous, in most of the feathers, occupying the centre as a broad stripe, but in some cases being confined to one side. The nostril is vertical and of the same oblong form as that of *Aq. Vindhiana*.

I cannot understand how our Indian *A. Vindhiana* came to be con-





founded with the well-marked African *A. navioides*; no two birds could be more distinct, the foxy-red plumage of the latter being most striking. As far as general tone of colour goes, the African species more resembles *Aquila fulvescens*, Gray in its immature or buff stage; but this last is readily distinguished by its very circular nostril, not to mention other well-marked differences.

#### AQUILA VINDHIANA, Franklin.

Having seen Ruppell's plate of *Aquila albicans* and read what Mr. Blanford\* and Dr. Finsch† say of the North East African species, which they term *A. rapax*, Temm., I strongly suspect its identity with our Indian *A. Vindhiana*. From what I have seen of true *Aquila navioides* vel *rapax*, I cannot conceive of this bird ever being "pale cream coloured" or "blackish brown;" and a species distinct from *A. navioides* (and which has been confounded with it) is doubtless found in the Northern portion of Africa. Rüppell's plate of *A. albicans* is the most perfect representation of a pale "Wokhab" that could be desired. A series of North African and Punjab birds should be compared. Mr. J. H. Gurney once told me (*in litt.*) that the identity of the North African Eagle generally termed *A. navioides* with our Indian *A. Vindhiana* was very probable; and also that Lord Walden had Abyssinian examples of the latter species.

#### ARCHIBUTEO STROPHIATUS and A. CRYPTOGENYS Hodgs.

Are two entirely distinct species. I have copies of Hodgson's minute drawings of each, with all details of bills and feet. Although both are of similar size, the latter is a much feebler bird and more of a Buzzard; it has a very much smaller foot, a more slender tarsus, and a much smaller bill, and while *A. strophiatius* has the nostril free, *A. cryptogenys* has it partially hidden by plumes. The plumage of the two birds is also entirely different. Neither, I should remark, bears the faintest resemblance to *Aquila pennata*, which is only two-thirds of the size of Hodgson's two species, so that if a specimen of the last-named in the British Museum, said to have been sent by Hodgson, is labelled *A. strophiatius*, it could not have been so labelled by Hodgson, who cannot be held responsible for what is probably due to Museum blunders, and who anyhow knew the Booted Eagle too well to apply the name of *strophiatius* to it.

#### MILVUS PALUSTRIS, And.

P. A. S. 1873, pp. 142—147.

Mr. Anderson authorizes me to withdraw this species. I have procured a considerable series of the common Indian village Kite (*M. affinis*, Gould),

\* Zoology and Geology of Abyssinia, p. 295.

† Trans. Zool. Soc. Lond., 1870, p. 201.





and there appears to be but little doubt that *M. palustris* is this bird in either second or third plumage.

As before observed, *M. Govinda*, Sykes is the larger Kite which comes to the plains of India in the cold weather. The large dimensions given by Sykes render it certain that he described the larger species, for no common village Kite reaches the length of 26 inches. It is also pretty clear that Sykes did not contemplate there being two affined Kites, both of them found in the country in which he worked.

Mr. Gurney has informed me that the two types are of different sizes; but regardless of the types, neither of which in this instance may have been the very one from which Sykes described, I think we should hold to the original description, which describes a large 26-inch Kite. And in this case *Milvus major*, Hume and *Milvus melanotis*, Temm. and Schleg. become synonyms of *Milvus Govinda*, Sykes.

I possess a common Indian village Kite, returned to me by Mr. Gurney as being feather for feather identical with the Australian species, *M. affinis*, Gould. This identical bird is the commonest form of the resident species distributed so widely over India; and I think, therefore, that our common Kite should in future be known by its correct name of *M. affinis*.

At Mussoorie, both species are to be seen during the spring and summer, but more in the interior of the hills only the large species, *M. Govinda*, is met with. A few breed at Barahaut on the Bhaugaruttee.

#### PERNIS CRISTATA, Cuv.

A young bird from the nest which I once kept in confinement, had the breast of a rather light earth-brown, each feather having a black central stripe. Even in this young bird the crest was well developed.

The dark-plumaged birds are the fully adult ones. I have one shot from the nest in this plumage, and all I saw at Saharunpore in July, where they had their nests in trees near the canal, were of this dark plumage. In speaking of the young bird, I should have mentioned that the upper plumage was a very dark clove-brown.

#### HIRUNDO DAURICA, Lin. and *H. ERYTHROPTYGIA*, Sykes.

I only met with the latter species in cishimalayan Cashmere, as far up as Chungus on the Tawi river. At Mussoorie, Simla, and Almorah, and also at Binsur, north of Almorah, the strongly striated species with paler rump-band (*H. Daurica*) prevails. It is also somewhat larger than *H. erythroptygia*. I have procured both in the plains in the cold weather, but the hill bird is there very much scarcer. *H. erythroptygia* breeds near Chunar, and at most places in the North-West Provinces where there are old buildings or quarries suitable. The eggs are laid at the commencement of the rains. At Mussoorie, I saw a nest of *H. Daurica* on the ceiling of



a bath-room in Col. Macdougall's house. The birds went in and out through a broken pane of glass. Other nests were affixed to the underside of the roofs of servants' houses belonging to a house at the south end of Mussoorie. The doors being generally left open, the place just suited the swallows, which were only shut up with their nests at night. The young were hatched in the beginning of July, so that the eggs must have been laid towards the latter part of June. I have, however, seen eggs of this species at Almorah in the end of April.

#### HEMICHELIDON SIBIRICA, Gmel.

*H. fuliginosa*, Hodg.

I have referred to this species in J. A. S. B., 1872, p. 75. It is now known by its older term of *H. Sibirica*, Gmel. I compared my examples with one of Hodgson's in the Indian Museum, and found them identical. Hodgson's dimension (2½ in.) for the wing refers to the minimum size; the range of variation in length of wing is greater than I supposed possible in such a small bird, viz. 2.75 to 3.05 in. What the small species referred to by me in J. A. S. B., 1872, p. 76 was, I have no means of ascertaining. I remember it well, and still have Mr. Hume's letter concerning it, written at the time, when he assured me that Hodgson's species was not the one commonly received as such.

#### ALSEONAX TERRICOLOR, Hodgs. and A. LATIROSTRIS, Raffles.

Mr. Hume considers these species identical, and in writing of the former always terms it *A. latirostris*, under which name he has figured it in 'Lahore to Yarkand.' Mr. Swinhoe\* identifies *Muscicapa cinereoalba*, Temm. and Schleg. with *Alseonax latirostris*, Raffles. Having examined the Chinese species *M. cinereoalba*, I find it distinct from *A. terricolor*, by its shorter tail and rather differently shaped and somewhat broader and shorter bill, which is also blacker towards the tip than in the other bird. *Alseonax latirostris* is without doubt one of these two closely allied birds; and the question is, Which of the two agrees with Raffles's type and description? Mr. Hume appears to think that because *A. terricolor*, Hodgs. has been procured in the country from which Raffles described his *A. latirostris*, it is therefore Raffles's species; but the other bird, which is a common species in China, may also occur in Sumatra in winter.

I do not know whether Mr. Swinhoe was correct in uniting *A. cinereoalba* and *A. latirostris*, and whether he compared his examples of the former with the type or not; and the subject requires thorough investigation, for Mr. Swinhoe† speaks of the Chinese bird as being "identical with the Indian species."

\* Proc. Zool. Soc. Lond., 1871, p. 325.

† P. Z. S., 1863, p. 288.





I know for a certainty, from close comparison, that Mr. Swinhoe's examples of *M. cinercoalba* in the Indian Museum are not identical with the Indian species *A. terricolor*, and I have indicated the points of difference. This identification of his makes me very much doubt that of *A. cinercoalba* with *A. latirostris*. Apparently he has not noted the difference between *A. terricolor* and *A. cinercoalba*.

I fail to see any grounds whatever for Mr. Hume's identification in the fact that both he and Lord Walden have *A. terricolor* from the locality whence Raffles obtained his species; and the question, What bird is *Alseonax latirostris*? must be regarded as at present an unsettled one.

#### ERYTHROSTERNA PARVA.

J. A. S. B., 1872, p. 76.

The bird I observed in Cashmere should be *Erythrosterna hyperythra*, Cabanis, distinguished from *E. parva* by having a band of velvet-black down each side of the neck and edging the red of the throat and breast. This full breeding-plumage is assumed after the birds have left the plains. In the cold weather when they re-appear, they have lost the black band; but the old males retain the red breast. In this plumage it has been mistaken for *E. parva*, which for the present should be expunged from the Indian list.

#### ERYTHROSTERNA ALBICILLA, Pallas.

Erroneously termed *E. leucura* by Blyth and Jerdon, this species having a western limit at about Buxar or Ghazeepore and being replaced in the North-West by the aforementioned species. The black wings and tail of *E. albicilla* and its colder and greyer plumage readily distinguish it from the other when in immature or female plumage; it is not nearly so often procured with a red throat, and even then the red does not extend down the breast as in the other species, but is confined to the throat.

#### ACROCEPHALUS STENTOREUS, H. and E.

*Acrocephalus brunnescens*, Jerdon, Ibis, 1874, p. 49.

Lord Walden\* considers the Cashmere species to be distinct. I have seen many both in Cashmere and in the plains of India, and the birds are perfectly identical. The very peculiar and loud voice is alone sufficient to identify the bird by, whether in the plains or in Cashmere. It varies somewhat in size and in tone of colour; the latter depending upon the season of the year. Our plains' birds are only with us during the cold weather, leaving in the spring. Cashmere is the nearest breeding-place, but the great majority of the birds probably go farther north. I should also remark that in this species length of bill, wing, and tail is variable.

\* Trans. Zool. Soc. Lond., 1872, p. 64.





## ACROCEPHALUS DUMETORUM, Blyth.

I saw a few of this species near Mussoorie on June 1st frequenting dense rose-thickets at about 7000 feet elevation. Whether they would have remained there to breed or gone further north, is a question to be solved. Capt. Hutton is said to have taken the eggs near Mussoorie. The males were not singing, as they usually do vigorously when the nest is built.

## DUMETICOLA AFFINIS, Hodgs.

Is subject to variation as regards being spotted or not, just as is *D. major*, Brooks. I obtained one or two unspotted examples of the latter; they were breeding males, too, and in full song. Mr. Hodgson was aware of the variation, and hence figures *D. affinis* as unspotted, but describes it as spotted. The female of neither species has been recorded; that sex in both is probably unspotted. I never obtained a female of *D. major*.

## DUMETICOLA BRUNNEIPECTUS, Blyth.

Referred to by Mr. Blanford in J. A. S. B., 1872, p. 164. I examined this bird, and found it to be *D. affinis* in the unspotted stage. I would suppress Blyth's *D. brunneipectus* altogether as a species, considering it but *D. affinis*, Hodgs.

## TRIBURA LUTEOVENTRIS, Hodgs.

I examined the specimen referred to by Mr. Blanford\* and found it also to be *Dumeticola affinis*, Hodgs. in the unspotted plumage. *Tribura luteoventris* has a longer head, measured from the back of the skull to the tip of the bill, which latter is also of a different shape. The specimen in the Indian Museum is so old and faded that the original colour cannot be recognized; nor can the forms of wing and tail be ascertained.

## NEORNIS FLAVOLIVACEA, Hodgs.

I have this species, and it is a greenish olive above. Hodgson's drawing, No. 900, does not represent it, as stated by Mr. Hume,† but is applicable to *Horornis assimilis*, Hodgs., as stated by Gray.

## PHYLLOSCOPUS PALIDIPES, Blanford, J. A. S. B., 1872, p. 162.

Is not a *Phylloscopus*, but a true *Horeites*. I have examined the type: the second quill is equal to about the sixteenth; third equal to eighth; the first, second, third, and fourth are graduated, the distance from tip to tip of each feather diminishing till the fourth is reached. This is a very rounded wing, such as is not possessed by any *Phylloscopus*; in the wing of which genus there is always a long space

\* Journ. As. Soc. Bengal, 1872, p. 164.

† Stray Feathers, 1873, p. 444.



between first and second quills, and the second is equal to from fifth or sixth to eighth or ninth, according to the species. The tail, too, of *Horeites pallidipes* is much rounded and *non-phyloscopine*. A further difference between *Phylloscopus* and *Horeites* lies in the fact that the former has twelve tail-feathers and the latter ten. I cannot see any generic distinction between *Horornis* and *Horeites*; *Neornis* also appears to be the same with a better developed tail.

#### PHYLLOSCOPUS MAGNIROSTRIS, Blyth.

Mr. Hume\* tells us that this bird is identical with *P. borealis*, Blasius (*P. sylvicultrix*, Swinhoe). I examined the Chinese examples of the latter, in the Indian Museum, and found the following differences:

1. *P. borealis* has a minute first primary, as in *P. sibilatrix*, Bechst., while *P. magnirostris* has a much larger one, as in *Hippolais Rama*, Sykes.

2. The wing of *P. borealis* is of a different shape from that of *magnirostris*, being more pointed, with the 2nd quill intermediate between the 5th and 6th; while *P. magnirostris* has a wing much more rounded in form, the 2nd quill being equal to about the 9th.

Such differences as these are fatal to identity.

#### CULICIPETA CANTATOR, Tickell.

I examined the specimen referred to by Mr. Blanford† and found it to be *Reguloides viridipennis*, Blyth, and to agree perfectly with the types in the Indian Museum. *C. cantator* is a very different bird, and is correctly described by Jerdon.

#### REGULOIDES VIRIDIPENNIS, Blyth.

May be described as a small and brightly coloured *Reg. trochiloides*, Sundevall. Small examples of *Reg. trochiloides* are very difficult to separate from *Reg. viridipennis*.

#### REGULOIDES MACULIPENNIS, Blyth.

Mr. Hume‡ identifies this species with *Reg. chloronotus*, Hodgs.; against which I do protest. I also have seen Hodgson's drawing referred to by Mr. Hume and could not come to such a conclusion. Hodgson's types of *chloronotus* have been identified by Blyth and others with *Reg. proregulus*, Pallas. The drawing referred to is one intended to represent the nest, which by the bye is that of an *Æthopyga*, and we have no evidence that Hodgson distinguished between his *Abornis chloronotus* and *Reg. maculipennis*, or that he knew the latter species at all. Such an identification from this slightly coloured drawing cannot be admitted. Hodgson sometimes over-

\* Stray Feathers, 1873, p. 494.

† Journ. As. Soc. Bengal, 1872, p. 163.

‡ Stray Feathers, 1873, p. 494.



coloured and sometimes under-coloured. Take his *Lophophanes dichrous*: the drawing is far too red, and it would be impossible to recognize the species intended from it. So also with his *Parus Œmodius*: it was this very faulty drawing, omitting the crest and the wing spots, that led me to describe *Lophophanes Humei* (J. A. S. B., 1873, p. 57), which must henceforward stand as *Lophophanes Œmodius*, for Blyth made out that the type of *Parus Œmodius* was not a *Parus* but a *Lophophanes*. Many of Hodgson's drawings are very good, especially those in which he had evidently superintended the work and given minute details, but others, such as that of the supposed *Reg. maculipennis*, are insufficient for the determination of such birds as the *Phylloscopi*, which, as a rule, resemble each other so much in size and colour.

I also examined the specimen referred to by Mr. Blanford in J. A. S. B., 1872, p. 162, and found it to be *Reguloides maculipennis*, Blyth; as also was *Reguloides* sp.? mentioned on the following page of the same Journal.

BUDYTES FLAVA, Lín.

B. CINEREOCAPILLA, Savi.

B. MELANOCEPHALA, Bonaparte.

Under the term *Budytes viridis*, Scop. Lord Walden\* makes great confusion. He says, "One example in winter plumage, olive green above, upper part of breast sulphur yellow, rest of under surface pure white; some of the ventral and under tail coverts dashed with sulphur yellow. Supercilium conspicuous, broad, and pure white. Agrees perfectly with examples from Continental India."

This bird is, of course, *Budytes flava*, the characteristic of which is the broad white supercilium. Again he says,† "*Motacilla flavescens*, Stephens, Gen. Zool. Aves. X, p. 559, is enumerated in the 'Hand list' by Mr. G. R. Gray, as a distinct species, with the habitats of the Moluccas, Celebes, Timor and Java, assigned. Stephens gave this title to Buffon's Bergeronnette de l'île de Timor Hist. Nat. V. p. 275. Buffon's bird belongs to that phase of plumage of *B. viridis*, (Gm.) in which the superciliary stripe is yellow, the upper plumage ash coloured, and the under yellow." When the male of *B. flava* has newly moulted in the spring, the supercilium is sometimes strongly tinged with bright yellow, as are the margins to the white wing-coverts and tertials; this yellow rapidly fades away leaving the feather pure white: the yellow tinge on the white wing margins is a regular occurrence, but that on the supercilium is accidental or, I should

\* Trans. Zool. Soc., 1872, p. 65.

† In a memoir 'On the Birds of Celebes,' Trans. Zool. Soc. Lond., Vol. VIII, part 2, 1872, p. 65.



rather say, occasional and not specific. Of the many hundreds of examples examined by me, only three had this yellow bloom on the supercilium. Lord Walden, however, speaks of the bird as being *ash-coloured* above! The ash-coloured back in the field-wagtails pertains only to the young and, perhaps, to the female in winter plumage. When the supercilium is *yellow*, the back is *green* in *B. flava*. Stephens' bird was probably the female of *Budytes citreola*, Pallas or the male in autumnal plumage, for this species has a yellow supercilium and an ash-coloured back; which *B. flava*, *B. cinereocapilla*, and *B. melanocephala* certainly have not.

There are four distinct yellow field *Budytes* with olive green backs, and I note them, with short distinguishing characters of the mature male.

<i>B. flava.</i>	Grey head, broad white supercilium, grey and white cheeks.	Generally distributed over the old world and northern half of the new.
<i>B. cinereocapilla.</i>	Dark grey head, supercilium absent or else very narrow and white; often only a half supercilium behind the eye; cheeks a dark slate colour or almost black. This dark cheek is the well marked peculiarity of the species.	Eastern Europe, India, and China.
<i>B. melanocephala.</i>	Pure black head, with very rarely indeed a supercilium, and then very narrow, like a thin white thread. I have twice seen examples with this thread-like supercilium. The black head is a good distinction.	Eastern Europe, India, and China.
<i>B. Rayi.</i>	Top of head yellowish olive, supercilium bright yellow, and cheeks yellow.	Western Europe, North-West Africa, and Central Asia.*

It will thus be seen that the colour of the cheek in summer is alone a sufficient criterion.

It seems inexplicable to me how so many good ornithologists have confounded these four very distinct species, and lumped them together as *B. flava* with varieties, or as *B. viridis* with varieties.

There are but two yellow-headed marsh wagtails found in all India, and, I believe, in all the world besides, viz. *Budytes calcaratus*, Hodgs.—with black back and yellow head, sometimes a greyish patch remaining on the lower back; and *Budytes citreola*, Pallas—with grey back and yellow head, also generally a crescentic black band above the shoulders at the hind part

\* Two examples of this species, as also of *Anthus pratensis*, were lately obtained by Dr. Stoliczka in Yarkand.



of the lower neck, but this is sometimes absent, even when the bird is in full plumage. *B. citreoloides*, Hodgs. is identical with this latter species, and not with the former, as Mr. Hume supposes in 'Lahore to Yarkand.' Hodgson's drawing represents a yellow-headed wagtail with a grey back. The back feathers are always more or less changed when the head in spring becomes pure yellow; Hodgson's drawing thus shewing a uniform grey back with the yellow head, is clearly a representation of a male *B. citreola*. When the other species, *B. calcaratus*, Hodgs., attains the yellow head, the back is either blotched largely with jet-black or is entirely black. It is therefore an utter impossibility for Hodgson's *B. citreoloides* to have been the black backed bird.\* *B. citreoloides*, Hodgs. is a synonym of *B. citreola*, Pallas, and as such should sink into disuse. Hodgson's drawing of *B. calcaratus* is lifesized, and represents the bird in winter plumage with yellow supercilium, olive cap, and grey back. In this plumage it closely resembles *B. citreola* in its winter plumage. It is *by the long tarsus alone* that I connect *B. calcaratus* with the black-backed bird. The tarsus of *B. citreola* never reaches the size given by Hodgson for *B. calcaratus*; both in the drawing and in the table of dimensions, the length of the tarsus given is that of the largest black-backed birds I have procured. In 'Lahore to Yarkand' Mr. Hume appears to consider Hodgson's description as inapplicable to the black-backed species; but I cannot see in what respect it does not suit. It should be remembered that Hodgson measured the tarsus from the sole of the foot, and not from the junction of the toes, the latter being the usual mode of measurement.

The females of all the six species I have noted, have their characteristics, but it would add too much to the length of this paper to introduce them now; enough to say that they abundantly confirm my view of the distinctness of each.

These wagtails can only be properly worked out by the field observer, and the confusion into which cabinet naturalists have thrown them is thus easily accounted for.

#### MOTACILLA CASHMIRIENSIS, Brooks.

Is only *M. Hodgsoni*, Gray in full summer plumage. Having had abundant opportunities of again observing this bird up the valley of the Bhagaruttee, I am forced to the above conclusion.

I formerly thought that *M. Hodgsoni*, Gray and *M. personata*, Gould were identical, the former being the latter in breeding plumage: but having lately had the advantage of Mr. Mandelli's fine series of *M. Hodg-*

\* Gould in his 'Birds of Asia' has misapplied the term to the black backed yellow headed Wagtail.



*soni*, shewing that the adult male retains its black back during the autumn and winter months, it is impossible to avoid the conclusion that the two species, though closely affined, are thoroughly distinct.

*M. Hodgsoni* may be described as a black-backed *M. personata*. Each species has the eye set in a diamond-shaped white patch, which even in young grey and white birds of the year is conspicuous; so that neither should ever be confounded with *M. luzoniensis* or *M. Dukhunensis*.

Old females of *Hodgsoni* have black backs like the males; but younger birds, as I take them to be, often have the back grey, but of a more dusky shade than that of *personata*, which has the back of a pure light grey. Some females of *Hodgsoni* have the grey clouded with black to a slight extent, especially on the upper portion of the back.

A parallel case of specific distinctness existing only in the colour of the back is that of *Budytes calcaratus*, Hodgson and *Budytes citreola*, Pallas; the former of which has a jet black back in the breeding season, while the latter has invariably a grey back, with generally a black half collar at the lower part of the hind neck during the breeding season. I refer to the males only, for the females are very similar to one another.

#### MOTACILLA LUZONIENSIS, Scop.

The western limit of this species appears to lie between Dinapore and Buxar, in the districts in which I have been placed. The old males, to a great extent, retain the black back during autumn and winter, and even the old females are somewhat patched and clouded with black at these seasons. The chin and throat is always white, and the white band down the side of the neck, as in *M. Dukhunensis*, is invariably present at all seasons. This white band communicates with the white surrounding the eye. In *M. personata*, the eye, at all seasons, is set in a diamond-shaped patch of white, which is bounded below, as well as above, by black; this white eye-patch has thus no communication with the white of the lower parts, and is the characteristic by which this species may at any time be easily known, when obtained in the plains.

Mr. Hume has pointed out to me that Dr. Jerdon's description of *M. Dukhunensis* is only applicable to *M. personata*, Gould, and this, as is proved by his appendix, was Dr. Jerdon's own conclusion; but in his description, the statement that "the neck all round is black" does not agree with another that in its winter dress it is barely distinguishable from *M. Luzoniensis*. *M. personata* is at all times conspicuously distinct from *M. Luzoniensis*. Dr. Jerdon's description of *M. Dukhunensis* is, however, not sufficiently definite to fix the species intended, neither is the original description by Sykes, except for the statement that "it very closely resem-





bles *M. alba* of Europe, but differs in being of a light slate or cinereous, and in the wing coverts and secondaries being edged with broader white" (P. Z. S., 1832, p. 91).

#### ANTHUS AGILIS, Sykes.

Was said by Blyth to be apparently *Anthus trivialis*, Penn. (= *Anthus arboreus*, Bechst). In the original description, Sykes says, "found on open stony lands;" but I think it probable, as it is the only *Anthus* noted by him, that his *agilis* was either *Agrodroma campestris*, Linn. or *Corydalla rufula*, Vieill. These pipits do affect stony and waste lands, as does *Corydalla striolata*, Blyth, but neither of the tree-pipits do, least of all *P. maculatus*, Hodg.,\* to which Sykes's term *agilis* has most unaccountably been applied: the most arboreal of all pipits certainly is never found on "open stony lands." I think it would be almost safe to conclude that Sykes's bird was one of the three I have named, viz. either *Ag. campestris* juv. with spotted breast or *C. rufula* or *C. striolata*. I am most inclined to the last. I am weary of hearing ornithologists speak of the green Chinese tree-pipit as *P. agilis*, Sykes, the application of the name to it being absurd.

#### ALAUDA DEVA, Sykes.

*Spizalauda Deva* Blyth.

I do not see any grounds whatever for separating the genus *Spizalauda* from *Alauda*, and I think the term should be abandoned. *Spizalauda simillima*, Hume is as true an *Alauda* in every respect, in colour of plumage, in voice, and in habits, as could be desired. It is rather small and this is all that can be said.

Sykes says of his *Alauda Deva*, that it is smaller than *A. Gulgula*, but *Alauda Malabarica*, which Mr. Hume would identify with *Alauda Deva*, is not smaller than *A. Gulgula*, but fully the same size, or if anything a larger and finer lark; Sykes's species is therefore the small one which Mr. Hume separated (J. A. S. B., 1870, p. 120) as *S. simillima*; and the last term becomes a synonym of *Alauda Deva*, Sykes. I have seen many of this last, including some brought by bird-catchers from localities well to the south and west, and there is but one species which is smaller than *gulgula*, and this is the true *Alauda Deva* of Sykes. The Khandalla large crested lark, *A. Malabarica* Scop., will stand as such till the contrary be shewn, and my *Alauda australis* of the Neilgherries (Stray Feathers, 1873, p. 486), which is a fine large non-crested rufous toned *Alauda*, will stand until an older name can be shewn as clearly pertaining to it.

\* In J. A. S. B., 1873, p. 83, line 24, for "never strictly arboreal, read "more strictly arboreal;"





ALAUDA DULCIVOX, Hodg.

Of the unfair identification of this species with *A. arvensis* of Europe, I shall say nothing more, but will leave those that have good eyes for form and colour to decide for themselves, when they have an opportunity of comparing specimens of each: I repeat that they are most thoroughly distinct, and that *A. arvensis* is *non-alpine* or *non-monticolous*. The colour and form of bill is different, the colour of the legs and feet is different, to say nothing of the different body plumage and almost total absence of rufous on the greater wing-coverts. There is the utmost difference that can be expected in birds of such similar plumage as larks.

CORVUS CULMINATUS, Sykes and C. INTERMEDIUS, Adams.

These two crows, though very similar in general appearance, are nevertheless quite distinct. As a rule the latter has a decidedly (*by fully an inch*) longer tail and is a bird of duller plumage. The voice of the hill bird, too, is notably different, being a much deeper toned and more hollow sounded croak. This great difference in the note strikes most observers on first going to the hills. For a time, I was inclined to believe with Mr. Hume in the identity of the two species, but having examined a good number of each and having paid great attention to the voices and manners, I am entirely convinced of their specific distinctness.

SCOLOPAX RUSTICOLA.

It was a mistake to include this bird among those that breed in the Cashmere Valley (J. A. S. B., 1872, p. 86). It breeds among the pines on the mountain sides, high up near the snows.

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ON THE OCCURRENCE OF A SUPERORBITAL CHAIN OF BONES IN THE ARBORICOLE (WOOD-PARTRIDGES).—By JAMES WOOD-MASON of Queen's College, Oxford.

(Received April 20th; read March 4th, 1874.)

(With Plate II).

In his elaborate paper 'On the Osteology of the Gallinaceous Birds and Tinamous' read before the Linnean Society on November 25th, 1862, Professor W. Kitchen Parker announced the remarkable discovery, in *Tinamus robustus*, "of a whole row of super-orbital bones, the like of which must be sought for, not amongst birds, but in a group of creatures a long way down in the scale," viz., in the Skinks and Blind-worms. Further on in the same paper, the presence of a similar chain of superorbitals in *Psophia crepitans*, "only in an enfeebled form," is mentioned. The same author, in a memoir 'On the Structure and Development of the Skull in the Ostrich Tribe' read before the Royal Society on March 9th, 1865, records the occurrence of a double row of these bones extending all along the superorbital margin from the lacrymal to the post-frontal process in *Tinamus variegatus*.

I have now to announce the occurrence of a similar chain of ossicles in four out of the eight recognized species of *Arboricola*, a genus of Indian Partridges, viz., in *A. torqueola*, *atrogularis*, *rufogularis*, and *intermedia*; and I look forward with especial interest to the examination of skulls of the two of the remaining species which have been referred by some authors to the subgenus *Peloperdix*, and which inhabit the Tenasserim provinces and the Malay peninsula.

Mr. Parker has pointed out how in the Lapwing (*Vanellus*) the frontal in the young bird sends out square denticles of bony substance under and beyond the nasal gland, which coalesce with one another, with the lachrymal in front, and with post-frontal process behind, so as to form beyond the gland a secondary frontal margin, which acts as a smooth cave to the eyeball; and that the superorbital chain of bones in the Tinamou takes the place of this secondary frontal margin and the denticles in the Lapwing, the same end being attained by different means. But in the Arboricolas the arrangement is totally different: in them the margins of the combined frontals so far from being bevelled or scooped for the reception of the nasal gland are rather prominent and the internal edges of the ossicles composing the chain come into close relation of apposition with them.

I have examined a considerable number of species of Gallinaceous birds, small and great, including, by the kindness of my friend Major Godwin-Austen, a species of *Bambusicola*, but have hitherto failed to detect so much as a single grain of bone in the superorbital membrane of any one of them.



The *Arboricolas*, I may add in conclusion, differ from all in not having the temporal fossa bridged by bone, the zygomatic process of the squamosal being quite rudimental.


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*Explanation of Plate II.*

- Fig. 1. Upper view of skull of *Arboricola rufogularis*, nat. size.  
 Fig. 2. Side view of the same skull, nat. size.  
 Fig. 3. Upper view of skull of a young individual of the same species, nat. size.  
 Fig. 4. Side view of the same skull, nat. size.  
 Fig. 5. Upper view of skull of *Tinamus robustus*, magnified two diameters.  
 (After Parker).  
*Sro.* Superorbital chain of ossicles; *l.* lacrymal; *p. o.* postorbital process; *s. o. m.* unossified portion of superorbital membrane.
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# INDEX.

 Names of new genera and species have an asterisk (\*) prefixed.

- 
- |                                    |                                  |
|------------------------------------|----------------------------------|
| Abelmoschus crinitus, 110          | Alseonax latirostris, 244, 245   |
| " ficulneus, 110                   | " terricolor, 244, 245           |
| " Manihot, 110                     | Althaea, 101                     |
| " moschatus, 110                   | " flexuosa, 102                  |
| " pseudo-abelmoschus, 110          | " rosea, 102                     |
| Abroma, 114                        | " Coromandeliana, 102            |
| Abrocnis castaneoceph, 168         | " Sinensis, 102                  |
| " chloronotus, 287                 | *Alycaeus bicrenatus, 148        |
| " flaviventris, 168                | " Burtii, 149                    |
| Abutilon, 101                      | " crenatus, 148, 149, 150        |
| " graveolens, 104                  | " crispatus, 148, 150            |
| " polyandrum, 104                  | " conicus, 146, 149              |
| " Indicum, 104                     | " diagonius, 149, 150            |
| Acrocephalus brunnescens, 245      | " inflatus, 146                  |
| " dumetorum, 246                   | " Ingrami, 147                   |
| " stentoreus, 245                  | " Ingrami, var. 150              |
| Acronodia punctata, 183            | " globulus, 147                  |
| Acrotrema, 45                      | " (Dioryx) graphicus var. minor, |
| " costatum, 45                     | 149                              |
| " Wightianum, 45                   | " Khasiacus, 146, 149, 150       |
| Actinodura Egertoni, 164           | " inflatus, 16                   |
| " Waldeni, 163                     | " lenticulus, 147                |
| Adinandra, 89                      | " multirugosus, 149              |
| " dasyantha, 91                    | " Nagaensis, 150                 |
| " villosa, 90                      | " polygonoma, 150                |
| Ægithaliscus erythrocephalus, 169. | " prosectus, 150                 |
| Æthopyga Gouldiae, 156             | " serratus, 148                  |
| " ignicauda, 156                   | " Stoliczkii, 147                |
| Agrodroma campestris, 252          | " strigatus, 146                 |
| Alaudala Raytal, 171               | " Theobaldi, 147                 |
| Alauda arvensis, 253               | " urnula, 150                    |
| " australis, 252                   | Anamitra, 59                     |
| " Deva, 252                        | " cocculus, 62                   |
| " dulcivox, 253                    | " paniculata, 62                 |
| " gulgula, 252                     | Anas poecilorhyncha, 176         |
| " Malabarica, 252                  | Anaxagorea, 48                   |
| Alphonsea, 48                      | " Luzoniensis, 54                |
| " lutea, 50                        | " Zeylanica, 54                  |
| " ventricosa, 50                   | Ancistrocladus, 95               |
| Alsocomus puniceus, 171            | " attenuatus, 96                 |
| Alsodeia, 72                       | " extensus, 96                   |
| " Bengalensis, 73                  | " Griffithii, 96                 |
| " Griffithii, 73                   | " stelligerus, 96                |
| " longiracemosa, 73                | " Wallichii, 96                  |
| " Roxburghii, 73                   | Anisoptera, 95                   |
| " mollis, 73                       | " glabra, 97                     |
| Alseonax cinereoalba, 244          | " oblonga, 97                    |





- Anisoptera odorata*, 96  
*Anneslea*, 89  
     " *fragrans*, 90  
     " *monticola*, 90  
     " *spinosa*, 65  
*Anoda*, 101  
*Anogeissus acuminatus*, 188  
     " *phillyreifolia*, 188  
*Anona*, 48  
     " *muricata*, 54  
     " *reticulata*, 54  
     " *squamosa*, 54  
*Anser Indicus*, 175  
*Anthus agilis*, 252  
     " *arboreus*, 252  
     " *pratensis*, 249  
*Antitaxis ramiflora*, 63  
*Aquila albicans*, 242  
     " *bifasciata*, 239  
     " *hastata*, 240  
     " *naevioides*, 241, 242  
     " *orientalis*, 239  
     " *pennata*, 241, 242  
     " *fulvescens*, 242  
     " *rapax*, 242  
     " *Vindhiana*, 241, 242  
*Arachnechthra Asiatica*, 177  
     " *intermedia*, 177  
*Arboricola intermedia*, 174, 254  
     " *rufogularis*, 174, 254  
     " *atrogularis*, 254  
     " *torqueola*, 254  
*Archibuteo cryptogenys*, 242  
     " *strophiatas*, 242  
*\*ARCUELLA*, 26  
*Areca*, 193, 194  
     " *Catechu*, 194, 200  
     " *costata*, 194, 200  
     " *disticha*, 201  
     " *gracilis*, 194, 201  
*\* " hexasticha*, 194, 201  
     " *laxa*, 200  
     " *pumila*, 200  
     " *triandra*, 194 200,  
*Arenga*, 195  
     " *saccharifera*, 195, 202  
*Argemone*, 65  
     " *Mexicana*, 65  
*\*Arnebia Tibetana*, 189  
*Artabotrys*, 48  
     " *Blumei*, 55  
     " *Burmanicus*, 55  
     " *crassifolius*, 55  
     " *hamatus*, 55  
     " *intermedius*, 55  
     " *odoratissimus*, 55  
     " *speciosus*, 55  
     " *suaveolens*, 55  
*Aspidocarya*, 59  
     " *uvifera*, 60  
     " *uvifera*, var. *mollis*, 60  
*Aspidopterys* 135, 136  
     " *concava*, 137  
     " *hirsuta*, 137  
     " *Helferiana*, 137, 184  
     " *lanuginosa*, 137  
     " *nutans*, 137  
     " *rotundifolia*, 137  
     " *Roxburghiana*, 137  
     " *tomentosa*, 137  
*Atragene Zeylanica*, 44  
*Atylosia calycina*, 186  
     " *candicans*, 186  
*Averrhoa*, 138  
     " *bilimbi*, 139, 140  
     " *Carambola*, 139, 140  
*Azanza Zollingeri*, 112  
*Balanopteris minor*, 118  
     " *tothila*, 118  
*Bambusicola Fytchii*, 173, 254  
     " *Hopkinsoni*, 172  
*Banisteria Benghalensis*, 136  
*Barbastellus communis*, 236  
*Barbus hexagonolepis*, 32  
     " *hexastichus*, 32  
     " *tor*, 32  
*Barclaya*, 64  
     " *longifolia*, 64  
*Berberis*, 63  
     " *Leschenaultii*, 63  
     " *Nepalensis*, 63  
*Bergia*, 82  
     " *aquatica*, 83  
     " *ammanioides*, 83  
     " *verticillata*, 83  
*Berrya*, 123  
     " *Ammonilla*, var. *mollis*, 124.  
     " *mollis*, 124  
*Binnendykia trichostylis*, 122  
*Biophytum*, 138  
     " *adiantoides*, 139  
     " *Candolleianum*, 139  
     " *Reinwardtii*, 139  
     " *sensitivum*, 139  
*Bischoffia Javanica*, 41  
*Bixa*, 73  
     " *Orellana*, 74  
*Bocagea*, 48  
     " *elliptica*, 49  
     " *hexandra*, 58  
*Bombax*, 102  
     " *gossypium*, 74  
     " *heptaphylla*, 113  
     " *insigne*, 112  
     " *Malabaricum*, 113  
     " *pentandrum*, 113  
*Borassus*, 196  
     " *flabelliformis*, 196, 204  
*Brachystemma*, 80  
     " *calycinum*, 81  
*Brassica*, 66





- Brassica campestris*, 67  
 „ *brassicata*, 67  
 „ *junca*, 67  
 „ *napus*, 67  
 „ *oleracea*, 67  
 „ *rapa*, 67  
*Brownlowia*, 123  
 „ *elata*, 124  
 „ *lanceolata*, 124  
 „ *peltata*, 124  
*Budytes calcaratus*, 249, 250, 251  
 „ *citreola*, 249, 250, 251  
 „ *citreoloides*, 250  
 „ *cinereocapilla*, 248, 249  
 „ *flava*, 248, 249  
 „ *melanocephala*, 248, 249  
 „ *Rayi*, 249  
 „ *viridis*, 248, 249  
*Buettneria*, 114  
 „ *Andamanensis*, 122, 123  
 „ *aspera*, 122  
 „ *catalpifolia*, 122  
 „ *crenulata*, 122  
 „ *echinata*, 123  
 „ *pilosa*, 122  
*Cadaba*, 68  
*Cajanus* ? *candicans*, 186  
*Calamosagus laciniosus*, 207  
 „ *ochriger*, 207  
 „ *scaphiger*, 206  
 „ *Wallichiaefolius*, 206  
*Calamus*, 197  
 „ *Andamanicus*, 198, 211  
 „ *arborescens*, 198, 208  
 „ *erectus*, 198, 209  
 „ *concinna*, 214  
 „ *exilis*, 213  
 „ *fasciculatus*, 198, 210  
 „ *grandis*, 208  
 „ *gracilis*, 198, 212  
 „ *Guruba*, 199, 213  
 „ *Helferianus*, 198, 212  
 „ *humilis*, 215  
 „ *hypoleucus*, 208  
 „ *latifolius*, 198, 210  
 „ *longisetus*, 209  
 „ *melanacanthus*, 215  
 „ *Mastersianus*, 214  
 „ *macrocarpus*, 209  
 „ *nitidus*, 214  
 „ *palustris*, 210  
 „ *paradoxus*, 198, 213  
 „ *platyspathus*, 214  
 „ *polygamus*, 215  
 „ *tenuis*, 198, 212  
 „ *tigrinus*, 198, 211, 215,  
 „ *viminalis*, 213  
 „ *Zalacca*, 207  
*Calophyllum*, 85  
 „ *amoenum*, 88  
*Calophyllum Bitangor*, 88  
 „ *inophyllum*, 88  
 „ *polyanthum*, 88  
 „ *spectabile*, 88  
 „ *tetrapetalum*, 88  
*Calysaccion Siamense*, 88  
*Camellia*, 89  
 „ *caudata*, 94  
 „ *drupifera*, 94  
 „ *Kissi*, 94  
 „ *simplicifolia*, 95  
 „ *thea*, 94  
 „ *theifera*, 94  
*Cananga*, 18  
 „ *odorata*, 51  
*Capparis*, 68  
 „ *orbiculata*, 70  
 „ *auricana*, 70  
 „ *bisperma*, 70  
 „ *callosa*, 69  
 „ *crassifolia*, 70  
 „ *disticha*, 70  
 „ *flavicans*, 70  
 „ *floribunda*, 70  
 „ *glauca*, 70  
 „ *grandis*, 70  
 „ *grandis*, var. *auricana*, 70  
 „ *Hasseltiana*, 70  
 „ *horrida*, 70  
 „ *membranifolia*, 70  
 „ *micrantha*, 69  
 „ *oligandra*, 70  
 „ *oxyphylla*, 70  
 „ *polymorpha*, 70  
 „ *Roxburghii*, 181  
 „ *sepiaria*, 71  
 „ *Sikkimensis*, 181  
 „ *trifoliata*, 71  
 „ *trinervia*, 70  
 „ ? *variabilis*, 68  
 „ *versicolor*, 71  
 „ *viminea*, 70  
 „ *Zeylanica*, 70  
*Caprimulgus Jotaka*, 153  
 „ *monticolus*, 153  
*Cardamine*, 65  
 „ *hirsuta*, 66  
 „ „ var. *sylvatica*, 66  
*Carpophaga insignis*, 171  
 „ *sylvatica*, 171  
*Carpophyllum macropodum*, 117  
*Caryota*, 195  
 „ *Cummingii*, 203  
 „ *Griffithii*, 203  
 „ *mitis*, 204  
 „ *sobolifera*, 195, 203  
 „ *urens*, 203  
*Casarca leucoptera*, 176  
 „ *rutila*, 176  
*Celosia corymbosa*, 81  
*Cerastium cordifolium*, 81





- Ceratophyllum* 82  
     "    *demersum*, 83  
     "    *demersum*, var. *tuberculatum*, 83  
     "    *tuberculatum*,  
     "    *verticillatum*, 83  
*Cerionis Blythii*, 172  
     "    *Caboti*, 172  
*Certhia Nipalensis*, 157  
*\*Ch. SERPHEON*, 144  
*Chamaerops*, 196  
     "    *Khasyana*, 196, 204  
     "    *Martiana*, 204  
*Chibia hottentota*, 157  
*Chiomeles*, 144  
     "    *caudatus*, 144  
     "    *torquatus*, 142, 144  
*Choulmoogra odorata*, 76  
*Chrysococcyx xantherhynchos*, 155  
*Ciconia leucocephala*, 175  
*Cissampelos*, 59  
     "    *convolvulacea*, 61  
     "    *Caapa*, 61  
     "    *glabra*, 61  
     "    *hernandifolia*, 61  
     "    *hexandra*, 61  
     "    *pareira*, 61  
*Cisticola melanocephala*, 165  
     "    *ruficollis*, 165  
     "    *russica*, 166  
     "    *schoenicola*, 165  
*\*Cithara amabilis*, 23  
*Cleidion Javanicum*, 134  
*Clematis*, 43  
     "    *acuminata*, 44  
     "    *bracteata*, 43  
     "    *Buchananiana*, 44  
     "    *Cadmia*, 43  
     "    *floribunda*, 44  
     "    *Gouriana*, 44  
     "    *grossa*, 44  
     "    *hedysarifolia*, 44  
     "    *inversa*, 44  
     "    *Munroana*, 44  
     "    *smilacifolia*, 44  
     "    *subumbellata*, 44  
     "    *subpeltata*, 44  
*Cleome*, 67  
     "    *Chelidonii*, 68  
     "    *pentaphylla*, 68  
     "    *viscosa*, 68  
*Cleyera*, 89  
     "    *gymnanthera*, 90  
*Cocculus*, 59  
     "    *acuminatus*, 62  
     "    *cordifolius*, 60  
     "    *glaucescens*, 62  
     "    *incanus*, 61  
     "    *Linneanus*, 61  
     "    *nudiflorus*, 60  
     "    *macrocarpus*, 62  
*Cocculus villosus*, 61, 62  
*Coccytes Coromandus*, 156  
     "    *melanoleucos*, 155  
*Cochlospermum*, 73  
     "    *gossypium*, 74  
*Cocos*, 193  
     "    *nucifera*, 193, 200  
*Columbia*, 123  
     "    *floribunda*, 124  
     "    *Merguensis*, 124  
*Combretum Chinense*, 188  
     "    *dasystachyum*, 187  
     "    *extensum*, 188  
     "    *Griffithii*, 188  
     "    *pyrifolium*, 188  
     "    *ovalifolium*, 188  
     "    *platyphyllum*, 188  
     "    *quadrangulare*, 188  
*Conus* *characteristicus*, 22  
     "    *(Chelyconus) pretiosus*, 22  
     "    *(Chelyconus) Masoni*, 22  
     "    *Malaccanus*, 22  
     "    *muscosus*, 22  
     "    *(Rhizoconus) Seychellensis*, 22  
     "    *spectrum*, 22  
     "    *subulatus*, 22  
*Coralliobia fimbriata*, 29  
*Corchorus*, 123, 129  
     "    *acutangulus*, 130  
     "    *10-angularis*, 130  
     "    *capsularis*, 130  
     "    *fascicularis*, 130  
     "    *fuscus*, 130  
     "    *olitorius*, 130  
     "    *trilocularis*, 130  
     "    *tridens*, 130  
     "    *urticaefolius*, 130  
*Corvus culminatus*, 170, 253  
     "    *intermedius*, 253  
*Corydalla rufula*, 252  
     "    *striolata*, 252  
*Corypha*, 196  
     "    *elata*, 205  
     "    *Gebanga*, 197, 205  
     "    *macropoda*, 197, 205  
     "    *Talliera*, 205  
     "    *umbraculifera*, 197, 205  
*Cotyle Sinensis*, 171  
*Crataeva*, 68  
     "    *hygrophila*, 71  
     "    *Narvala*, 71  
     "    *Roxburghii*, 71  
*Cratoxylon*, 83  
     "    *arborescens*, 85  
     "    *cuneatum*, 85  
     "    *formosum*, 84  
     "    *neriifolium*, 85  
     "    *polyanthum*, 85  
     "    *polyanthum*, var. *genuinum*,  
         85  
     "    *polyanthum*, var. *carneum*, 85



- Cratoxylon prunifolium*, 84  
*Cuculus poliscephalus*, 155  
*Culicipeta cantator*, 247  
*Cyanops Asiatica*, 176  
*Cyathostemma*, 48  
     " *viridiflorum*, 51  
*Cyathocalyx*, 48  
     " *Martabanicus*, 54  
*Cyclea*, 59  
     " *peltata*, 63  
*Cyclostemon eglandulosa*, 100  
*Cynopterus marginatus*, 236  
*Cynonycteris amplexicaudata*, 236  
*Cypraea Beckii*, 29  
     " *Macandrei*, 24  
*Cypselus infumatus*, 179  
     " *subfurcatus*, 153  
  
*Dafila acuta*, 176  
*Dæmonorops*, 199  
     " *grandis*, 208, 199  
     " *hypoleucus*, 199, 208  
     " *hystrix*, 208  
     " *oblongus*, 208  
     " *platyspathus*, 214  
*Decaschistia*, 102  
     " *crassiuscula*, 106  
     " *parviflora*, 106  
*Delima*, 45  
     " *sarmentosa*, 45  
*Desmodium (Phyllodium) grande*, 184  
     " *vestitum*, 148  
     " *pulchellum*, 184  
*Diceum chrysorrhæum*, 156  
*Dillenia*, 46  
     " *angusta*, 46  
     " *aurea*, 46  
     " *elongata*, 46  
     " *floribunda*, 46  
     " *Indica*, 46  
     " *ornata*, 46  
     " *pentagyna*, 46  
     " *parviflora*, 46  
     " *pilosa*, 46  
     " *pulcherrima*, 46  
     " *scabrella*, 46  
     " *speciosa*, 40  
*Dinops*, 142  
     " *Cestonii*, 142  
*Dipterocarpus*, 95  
     " *alatus*, 98, 99  
     " *angustifolius*, 99  
     " *laevis*, 97  
     " *costatus*, 41, 98  
     " *gonopterus*, 98, 99  
     " *grandiflorus*, 97  
     " *Griffithii*, 98  
     " *Hasseltii*, 98  
     " *incanus*, 98  
     " *laevis*, 97  
     " *obtusifolius*, 41, 98  
     " *pilosus*, 98  
     " *scaber*, 99  
     " *tuberculatus*, 97, 211  
     " *turbinatus*, 97, 98  
     " *vestitus*, 99  
*Dolichos bracteatus*, 186  
     " *Gangeticus*, 185  
     " *tomentosa*, 186  
*Drymaria*, 80  
     " *cordata*, 81  
*Drymoea brevicauda*, 167  
*Dumeticola brunneipectus*, 246  
     " *affinis*, 246  
     " *major*, 246  
*Dunbaria calycina*, 186  
     " *fuscus*, 186  
     " *podocarpa*, 185  
*Durio*, 102  
     " *Oxleyanus*, 100  
     " *Zibethinus*, 113  
*Dysopes*, 143  
     " *Cestonii*, 142  
     " *plicatus*, 143  
     " (*Molossus*) *Rüppelii*, 142  
  
*Echinocarpus*, 123  
     " *murex*, 130  
     " *Sigun*, 130  
     " *sterculiaceus*, 131  
*Elatine ammannioides*, 83  
*Elaeocarpus*, 123, 131, 182  
     " *aristatus*, 132  
     " *acronodia*, 183  
     " *bracteatus*, 132  
     " *cuneatus*, 134  
     " *cyanocarpus*, 133  
     " *floribundus*, 133  
     " *Ganitrus*, 133  
     " *glabrescens*, 183  
     " *grandiflorus*, 132  
     " *grandifolius*, 132  
     " *Griffithii*, 132  
     " *Helferi*, 133  
     " *hygrophilus*, 133, 183  
     " *integra*, 132  
     " *Jackiana*, 183  
     " *lacunosus*, 133, 134  
     " *lanceifolius*, 133  
     " *lanceolatus*, 132  
     " *leptostachya*, 134  
     " *littoralis*, 132, 182  
     " *longifolius*, 133  
     " *lucidus*, 134  
     " *oblongus*, 134  
     " *Palembanicus*, 183  
     " *pedunculatus*, 183  
     " *petiolatus*, 132  
     " *photiniaefolius*, 133  
     " *prunifolius*, 133  
     " *punctatus*, 183  
     " *robustus*, 133, 134





- Elaeocarpus rugosus*, 132  
     " *serratus*, 133  
     " *simplex*, 132, 182  
     " *stipularis*, 184  
     " *tuberculatus*, 132  
     " *Varunus*, 133  
     " *Wallichii*, 133  
*Ellipeia ferruginea*, 44  
*Elodea pruniflora*, 84  
*Emberiza fucata*, 171  
     " *pusilla*, 179  
*Enicurus Chinensis*, 168  
     " *guttatus*, 179  
     " *immaculatus*, 168  
     " *Leschenaultii*, 168  
     " *maculatus*, 179  
     " *nigrifrons*, 179  
*Ephialtes lempigi*, 176  
*Epirhizanthus cylindrica*, 79  
*Eriodendron*, 162  
     " *anfractuosum*, 113  
     " *pentandrum*, 113  
*Eriolana*, 114  
     " *Candollei*, 121  
*Eriorhaphis punicea*, 121  
*Erythrina lithosperma*, 41  
*Erythrochiton Wallichianum*, 90  
*Erythrosteria acornus*, 158  
     " *albicilla*, 245  
     " *hyperythra*, 245  
     " *leucura*, 245  
     " *maculata*, 168  
     " *parva*, 245  
     " *sordida*, 158  
*Erythroxyton*, 135, 135  
     " *Burmanicum*, 135  
     " *cuneatum*, 135  
     " *Indicum*, 135  
     " *Kunthianum*, 135  
     " *monogynum*, 135  
*Eulima*, 26  
     " (*Arcuella*) *mirifica*, 26  
     " *tortuosa*, 26  
*Eumyias melanops*, 177  
*Eurya*, 89  
     " *Chinensis*, 91  
     " *acuminata*, 91  
     " *Japonica*, 91  
     " *lucida*, 91  
     " *obovata*, 91  
     " *Roxburghii*, 91  
     " *serrata*, 91  
     " *symplocina*, 91  
     " *virens*, 91  
     " *Wallichiana*, 98  
     " *Wightiana*, 91  
*Euryale*, 64  
     " *ferox*, 65  
*Eurystomus orientalis*, 154  
*Fibraurea*, 59  
*Fibraurea tinctoria*, 59  
*Fimbristylis diphylla*, 201  
     " *polymorpha*, 201  
*Firmiana colorata*, var. *fulgens*, 117  
*Fissistigma scandens*, 47  
*Flacourtia*, 74  
     " *cataphracta*, 75  
     " *inermis*, 75  
     " *mollis*, 75  
     " *rotundifolia*, 75  
     " *sapida*, 75  
     " " var. *glaberrima*, 75  
     " " var. *genuina*, 75  
     " " var. *puberula*, 75  
     " *sepiaria*, 75  
     " *Sumatrana*, 75  
*Flemingia nana*, 186  
     " *sericans*, 186  
*Fuligula cristata*, 176  
*Gaertnera racemosa*, 136  
*Ganitrus sphaericus*, 133  
*Garcinia*, 85  
     " *anomala*, 87  
     " *Choisyana*, 88  
     " *cowa*, 87  
     " *cornea*, 86  
     " *dulcis*, 88  
     " *elliptica*, 87  
     " *heterandra*, 87  
     " *kydia*, 87  
     " *lanceaefolia*, 87  
     " *lobulosa*, 87  
     " *loniceroides*, 87  
     " *mangostana*, 86  
     " *Merguensis*, 87  
     " *pictoria*, 88  
     " *Roxburghii*, 87  
     " *speciosa*, 86  
     " *succifolia*, 87  
     " *xanthochymus*, 88  
*Garrulax albosuperciliaris*, 161  
     " *cerulatus*, 160  
     " *gularis*, 161  
     " *galbanus*, 161  
     " *merulinus*, 162  
*Gecinulus grantia*, 155  
     " *obtusifolia*, 136  
*Geranium*, 138  
*Glaucidium Brodiaei*, 152  
*Goniothalamus*, 49  
     " *cardiopetalus*, 56  
     " *Griffithii*, 56  
     " *sesquipedalis*, 56  
*Gordonia*, 89  
     " *floribunda*, 93  
     " *integrifolia*, 93  
     " *oblata*, 94  
     " *Wallichii*, 93  
*Gossypium*, 102  
     " *Barbadense*, 112



- Gossypium herbaceum*, 112  
 " *herbaceum*, var. *herbaceum*, 112  
 " " var. *hirsutum*, 112  
 " *hirsutum*, 112  
 " *obtusifolium*, 112  
*Graminicola Bengalensis*, 167  
*Grewia*, 123, 125  
 " *abutilifolia*, 127  
 " " var. *aspera*, 137  
 " " var. *sclerophylloides*, 128  
 " " var. *viridescens*, 127  
 " *acuminata*, 122  
 " *Asiatica*, 127  
 " " var. *nana*, 127  
 " " var. *vestita*, 127  
 " *aspera*, 127  
 " *calophylla*, 125  
 " *elastica*, 127  
 " *excelsa*, 126  
 " *floribunda*, 124  
 " *helicterifolia*, 126  
 " *hirsuta*, 126  
 " " var. *genuina*, 126  
 " " var. *helicterifolia*, 126  
 " " var. *viminea*, 126  
 " *heteroclita*, 122  
 " *humilis*, var. *Wallichii*, 127  
 " " var. *retusifolia*, 127  
 " " 127  
 " *laevigata*, 126  
 " " var. *glabra*, 126  
 " " var. *pubescens*, 126  
 " *lanceolata*, 128  
 " *microstemma*, 127  
 " *microcos*, 126  
 " *nana*, 127  
 " *pilosa*, 126  
 " *retusifolia*, 127  
 " *salvifolia*, 126  
 " *scabrida*, 126  
 " *sclerophylla*, 128  
 " *sinuata*, 126  
 " *tilesefolia*, 127  
 " *ulmifolia*, 126  
 " *viminea*, 126, 128  
 " *scabrophylla*, 128  
*Guatteria brevipetala*, 53  
 " *cerasoides*, 53  
 " *Jenkinsii*, 53  
 " *laterifolia*, 52  
 " *macrophylla*, 53  
 " *membranacea*, 53  
 " *nitida*, 53  
 " *pallida*, 201  
 " *spathulata*, 52  
 " *sesquipedalis*, 56  
 " *Sumatrana*, 53  
*Guazuma*, 114  
 " *tomentosa*, 121  
*Gynandropsis*, 67  
 " *pentaphylla*, 68  
*Gynocardia*, 74  
 " *odorata*, 76  
*Gypsophila*, 80  
 " *vaccaria*, 81  
*Harina caryotoides*, 203  
*Harpactes Hodgsoni*, 177  
*Helicteres*, 111  
 " *angustifolia*, 119  
 " *elongata*, 119  
 " *glabriuscula*, 119  
 " *hirsuta*, 119  
 " *hirsuta*, var. *spicata*, 119  
 " " var. *oblonga*, 119  
 " *isora*, 119  
 " *Javensis*, 119  
 " *lanceolata*, 119  
 " *oblonga*, 119  
 " *obtusa*, 119  
 " *plebeja*, 119  
 " *spicata*, 119  
 " " var. *lanigera*, 119  
 " *vestita*, 119  
 " *virgata*, 119  
 " *viscida*, 119  
*Hemichelidon fuliginosa*, 244  
 " *Sibirica*, 344  
*Heritiera*, 114  
 " *fomes*, 118  
 " *littoralis*, 118  
 " *macrophylla*, 118  
 " *minor*, 118  
 " *tothila*, 118  
*Hibiscus*, 102  
 " *Abelmoschus*, 110  
 " *abelmoschus*, var. *multiformis*, 110  
 " *aculeatus*, 109  
 " *cancellatus*, 110  
 " *cannabinus*, 110  
 " *diversifolius*, 109  
 " *esculentus*, 110  
 " *ficulneus*, 110  
 " *furcatus*, 109  
 " *hastatus*, 111  
 " *heterophyllus*, 109  
 " *hostilis*, 111  
 " *lampas*, 112  
 " *longifolius*, 110  
 " *lunarifolius*, 109  
 " *manihot*, 110  
 " *macrophyllus*, 111  
 " *micranthus*, 108  
 " *mutabilis*, 109  
 " *panduriformis*, 109  
 " *pentaphyllus*, 110  
 " *populneoides*, 112  
 " *populneus*, 111  
 " *procerus*, 109



- Hibiscus* prostratus, 110  
     "  pungens, 111  
     "  radiatus, 109  
     "      var. *Lindleyi*, 110  
     "  rigidus, 108  
     "  rosa *Sinensis*, 109  
     "  sabdarriffa, 110  
     "  sagittifolius, 110  
     "  scandens, 111  
     "  solandra, 108  
     "  setosus, 111  
     "  Storckii, 109  
     "  strictus, 110  
     "  Surrattensis, 109  
     "  Syriacus, 109  
     "  tetralocularis, 112  
     "  tiliaceus, 111  
     "      var. *tortuosus*, 111  
     "  tricuspis, 111  
     "  truncatus, 108  
     "  tubulosus, 109  
     "  venustus, 109  
     "      var. *Brandisii*, 109  
     "  vitifolius, 108  
     "  vulpinus, 111  
*Hierax* eutolmos, 152  
     "  melanoleucos, 152  
*Hierococcyx* varius, 155  
*Hippolais* Rama, 247  
*Hiptage*, 135  
     "  arborea, 136  
     "  Benghalensis, 136  
     "  candicans, 136  
     "  Madablota, 136  
     "  obtusifolia, 136  
*Hiraea* Indica, 137  
     "  nutans, 137  
     "  rotundifolia, 137  
     "  tomentosa, 137  
*Hirundo* Cahirica, 152  
     "  Daurica, 243  
     "  erythropygia, 243  
     "  gutturialis, 152  
     "  rustica, 152  
     "  Tytleri, 152  
*Homalium* foetidum, 75  
*Homraius* bicornis, 154  
*Hopea*, 95  
     "  eglandulosa, 100  
     "  faginea, 96  
     "  grandiflora, 96  
     "  gratissima, 100  
     "  Griffithii, 101  
     "  oblongifolia, 100  
     "  odorata, 100  
     "  scaphula, 100  
     "  vasta, 100  
*Horreites* pallidipes, 247  
*Horornis* assimilis, 246  
*Humea* elata, 124  
*Hyalostemma* Roxburghiana, 58  
*Hydnocarpus*, 74  
     "  castaneus, 76  
     "  heterophyllus, 76  
*Hydrocera*, 138  
*Hyperanthera* Moringa, 72  
*Hypericum*, 83  
     "  arborescens, 85  
     "  elodeoides, 84  
     "  Hookerianum, 84  
     "  Japonicum, 84  
     "  Leschenaultii, 84  
     "  oblongifolium, 84  
     "  triflorum, 84  
*Hypopieus* hyperythrus, 155  
*Illicium*, 47  
     "  majus, 47  
*Impatiens*, 139  
     "  Balsamina, 141  
     "      var. *coccinea*, 141  
     "      var. *vulgaris*, 141  
     "  capillipes, 141  
     "  Chinensis, 140  
     "  circæoides, 140  
     "  fasciculata, 140  
     "  heterophylla, 140  
     "  Malayensis, 141  
     "  natans, 141  
     "  Parishii, 141  
     "  reticulata, 140  
     "  setacea, 140  
     "  Tavoyana, 141  
     "  tomentosa, 140  
     "  violæflora, 141  
*Indigofera* debilis, 184  
     "  viscosa, 184  
*Ionidium*, 72  
     "  suffruticosum, 73  
*Ixulus* castaniceps, 169  
*Kayea*, 85  
     "  nervosa, 89  
*Kerivoula* Hardwickii, 236  
     "  picta, 236  
*Kleinhovia* hospita, 122  
*Korthalsia*, 197  
     "  angusta, 207  
     "  flagellaris, 207  
     "  laciniosa, 197, 207  
     "  rigida, 207  
     "  scaphigera, 197, 206  
*Kydia*, 102  
     "  calycina, 106  
     "  fraterna, 106  
*Labeo* dyôcheilus, 32  
*Lanius* collurioideus, 157  
     "  hypoleucos, 157  
     "  tephronotus, 157  
*Lælingia* Indica, 81  
*Leiothrix* argentauris, 169



- Leiothrix luteus*, 169  
*Lepidium*, 66  
     " *sativum*, 67  
*Leptocoma Hasselti*, 156  
*Leptoconchus Robilliardi*, 29  
*Leptonychia*, 114  
     " *glabra*, 122  
     " *heteroclita*, 122  
     " *moacurroides*, 122  
*Lespedeza pinetorum*, 184  
*Lebrtonia procumbens*, 105  
*Licuala*, 196, 204  
     " *longipes*, 196, 204  
     " *paludosa*, 196, 204  
     " *peltata*, 196, 204  
*Limacia*, 59  
     " *Amherstiana*, 62  
     " *cuspidata*, 62  
     " *triandra*, 62  
     " *velutina*, 62  
*Limnaeus Kienerii*, 152  
*Limopsis cancellata*, 28  
     " *compressa*, 28  
     " *Japonica*, 28  
*Linum*, 134  
     " *repens*, 134  
     " *trigynum*, 134  
*Liriodendron grandiflorum*, 47  
     " *liliiflora*, 47  
*Livistona*, 196  
     " *Jenkinsiana*, 205  
     " *speciosa*, 196  
*Lonicera leiantha*, 188  
     " *longiflora*, 188  
*Lophophanes Humei*, 248  
     " *Oemedius*, 248  
*Ludia foetida*, 75  
     " *spinosa*, 74  
*Macronycteris gigas*, 234  
*Magnolia*, 47  
     " *insignis*, 47  
     " *sphenocarpa*, 47  
*Mahonia Nepalensis*, 63  
*Malacocircus (Layardia) robiginosus*, 164  
     " *subrufus*, 165  
     " *terricolor*, 164  
*Malphigia*, 135  
     " *coccifera*, 136  
     " *coccigera*, 136  
     " *heteranthera*, 136  
*Malva*, 101  
     " *Neilgherrensis*, 102  
     " *verticillata*, 102  
*Malvastrum*, 101  
     " *ruderales*, 102  
     " *tricuspidatum*, 102  
*Mareca Penelope*, 176  
*Marginella (Volvarina) deformis*, 23  
     " *festiva*, 23  
     " *gemma*, 23  
     " *Marginella (Volvarina) inconspicua*, 23  
     " *neglecta*, 23  
     " *(Glabella) picturata*, 23  
     " *suavis*, 28  
*Marsyopetalum ceratosanthes*, 201  
*Motacilla Maderaspatana*, 168  
*Manglietia*, 47  
     " *insignis*, 47  
*Megaderma lyra*, 236  
*Melhanis*, 114  
     " *Hamiltoniana*, 121  
*Melia Birmanica*, 183  
*Melochia*, 114  
     " *corchorifolia*, 121  
     " *velutina*, 121  
*Melodorum*, 49  
     " *Bancanum*, 181  
     " *bicolor*, 67  
     " *Griffithii*, 57  
     " *latifolium*, 181  
     " *macranthum*, 56  
     " *manubriatum*, 181  
     " *monospermum*, 57  
     " *parviflorum*, 181  
     " *rubiginosum*, 57  
     " *verrucosum*, 57  
*Melops melanicterus*, 171  
*Menispermum cocculus*, 62  
     " *cordifolium*, 60  
     " *heteroclitum*, 62  
     " *hirsutum*, 31  
     " *myosotoides*, 61  
     " *polycarpum*, 62  
     " *tomentosum*, 60  
     " *triandrum*, 62  
     " *villosum*, 61  
     " *verrucosum*, 60  
*Mesua*, 85  
     " *ferrea*, 89  
     " *nervosa*, 89  
     " *pedunculata*, 89  
     " *speciosa*, 89  
*Michelia*, 47  
     " *aurantiaca*, 48  
     " *champaca*, 48  
*Micropternus phaeocephalus*, 176  
*Miliusa*, 49  
     " *tristis*, 181  
     " *Roxburghiana*, 58  
     " *sclerocarpa*, 58  
     " *velutina*, 58  
*Milvus affinis*, 242, 243  
     " *Govinda*, 243  
     " *melanotis*, 152, 243  
     " *major*, 243  
     " *palustris*, 242, 243  
*Minla ignotincta*, 169  
*Mitra assimilis*, 29  
     " *(Nebularia) assimilis*, 29  
     " *" caeligena*, 29  
     " *(Pusia) Cernica*, 24





- Mitra (Turricula) Garrettii, 29  
   " pardalis, 24  
 Mitrephora, 49  
   " aperta, 57  
   " Maingayi, 57  
   " reticulata, 57  
   " tomentosa, 57  
   " vandeeflora, 57, 181  
 Monocera ferruginea, 183  
   " grandiflora, 132  
   " rugosa, 132  
 Monoceras lanceolatum, 132  
   " obtusum, 132  
   " petiolata, 132  
   " trichanthera, 122  
 Monoon Sumatranum, 53  
 Mops Indicus, 143  
 Morindopsis capillaris, 189  
 Moringa pterygosperma, 72  
 Motacilla alba, 252  
   " Cashmeriensis, 250  
   " Dukhunensis, 251  
   " flavescens, 248  
   " Hodgsoni, 250, 251  
   " Luzoniensis, 251  
   " personata, 250, 251  
 Mucuna anguina, 186  
   " biplicata, 186  
   " mollissima, 187  
   " monosperma, 186  
 Mulleripicus puberulentus, 155  
   " Malabarica, 171  
 Munia nisoria, 170  
   " subundulata, 170  
   " undulata, 170  
 Murina cyclotis, 236  
   " harpia, 236  
 Muscicapa cinerea alba, 244, 245  
 Muscipula superciliaris, 167  
   " aestigma, 157  
 Mycteria australis, 175  
 Myriophyllum, 82  
   " Indicum, 83  
   " tetrandrum, 83  
   " tuberculatum, 88  
 Naravelia, 43  
   " dasyoneura, 44  
   " laurifolia, 44  
   " Zeylanica, 44  
 Nassa (Arcularia) callospira, 25  
   " semiplicata, 24  
   " (Telasco) Stoliczka, 24  
   " (Nietha) sinusigera, var. Cernica,  
     25  
   " (Hima) sistroidea, 24  
 Nasturtium, 65  
   " Benghalense, 66  
   " diffusum, 66  
   " Indicum, 66  
   " " var. Benghalense, 66  
 Nasturtium Indicum, var. glabrum, 96  
   " Madagascariense, 66  
   " montanum, 66  
 Nelumbium speciosum, 65  
 Nelumbo, 64  
   " nucifera, 65  
 Nemoricola Indica, 168  
 Neornis assimilis, 167  
   " flavolivacea, 246  
 Niebuhria, 67  
   " ? variabilis, 68  
 Nigella, 43  
   " Indica, 45  
   " sativa, 45  
 Niltava grandis, 177  
   " sundara, 177  
 Nipa, 193  
   " fruticans, 193, 199  
 Nycticejus ornatus, 236  
   " Temminckii, 236  
   " Tickelli, 236  
 Nyctinomus, 142  
   " Aegyptiacus, 143  
   " Bengalensis, 143  
   " Cestonii, 142  
   " insignis, 142  
   " Johorensis, 142, 144  
   " plicatus, 142, 143  
   " tenuis, 143  
   " tragatus, 143  
 Nyctiornis Athertoni, 153  
 Nymphæa, 64  
   " esculenta, 64  
   " lotus, 64  
   " " var. cordifolia, 64  
   " " var. pubescens, 64  
   " pubescens, 64  
   " rubra, 64  
   " stellata, 64  
   " " var. cyanea, 64  
   " " var. parviflora, 64  
   " " var. versicolor, 64  
 Ochrocarpus, 85  
   " Siamensis, 88  
 Oriolus tenuirostris, 166  
 Orophea, 49  
   " acuminata, 58  
   " Brandisii, 58  
   " hexandra, 58  
   " polycarpa, 57  
 Orthotomus edela, 166  
   " flavoviridis, 166  
 Otocompsa jocosa, 179  
 Oudemansia hirsuta, 119  
   " integerrima, 119  
   " viscida, 119  
 Oxalis, 138  
   " corniculata, 139  
   " pusilla, 139  
   " sensitiva, 139





- Oxymitra*, 49  
   " *fornicata*, 56  
   " *Maclellandii*, 55  
   " *stenopetala*, 55  
   " *unonaeifolia*, 56  
*Pachyglossa melanoxantha*, 156  
*Pachygone*, 59  
   " *dasycarpa*, 63  
   " *odorifera*, 63  
   " *ovata*, 63  
*Papaver*, 65  
   " *somniferum*, 55  
*Parabæna*, 59  
   " *sagittata*, 59  
*\*Paradoxornis Austeni*, 159  
   " *flavirostris*, 159  
*Parashorea*, 95  
   " *stellata*, 99  
*Paritium tiliaceum*, 111  
*Parus monticolus*, 170  
   " *oemodius*, 248  
*Parvatia*, 63  
   " *Brunoniana*, 63  
*Passer cinnomomeus*, 171  
   " *montanus*, 171  
*Pavonia*, 101  
   " *glechomifolia*, 105  
   " *odorata*, 106  
   " *rosea*, 106  
   " *Zeylanica*, 106  
*\*Pectunculus planatus*, 29  
   " *vitreus*, 29  
*Pelticalyx argentea*, 52  
*Pentace*, 123  
   " *Burmanica*, 124  
*Pentacine Siamensis*, 100  
*Pentacme*, 95  
*Pentapetes*, 114  
*Pentaptera pyrifolia*, 188  
*Pericampylus incanus*, 61  
*Pernis cristata*, 243  
*Pharnaceum depressum*, 81  
*Phaseolus dolichoides*, 185  
   " *fuscus*, 186  
   " *grandis*, 185  
   " *lucens*, 185  
*Phæanthus*, 49  
   " *dioicus*, 58  
*Phoenix*, 194  
   " *acaulis*, 194, 202  
   " *dactylifera*, 202  
   " *paludosa*, 194, 202  
   " *Siamensis*, 202  
   " *sylvestris*, 194, 202  
*Phyllorhina armigera*, 234, 235  
   " *brachyota*, 237  
   " *Commersonii*, 234  
   " *diadema*, 236  
   " *fulva*, 235  
   " *lrvata*, 235  
*\*Phyllorhina leptophylla*, 234  
   " *speoria*, 236  
*Phyllornis Cochinchinensis*, 180  
   " *chlorocephalus*, 180  
*Phylloscopus pallidipes*, 246  
   " *sylvicultrix*, 247  
   " *borealis*, 247  
   " *magnirostris*, 247  
   " *sibilatrix*, 247  
*Picus cathpharius*, 154  
*Pinanga*, 194  
   " *costata*, 200  
   " *Kuhlîi*, 200  
   " *patula*, 201  
*Pipastes maculatus*, 252  
*Pipistrellus affinis*, 236  
   " *Austenianus*, 236  
*Pitta cyanea*, 159  
   " *cucullata*, 158  
*Pittosporum ferrugineum*, 76  
*Plagiopteron*, 135  
   " *suaevolens*, 138  
*Planesticus fuscatus*, 159  
*Plectocomia*, 199  
   " *elongata*, 208  
   " *macrostachya*, 199, 207  
*Pnoepyga longicaudata*, 160, 178  
*Podiceps Philippensis*, 176  
*Polanisia Chelidonii*, 68  
   " *icosandra*, 68  
*Polyalthia*, 48  
   " *Andamanica*, 53  
   " *bifaria*, 53  
   " *cerasoides*, 53  
   " *costata*, 53  
   " *dubia*, 53  
   " *var. Falconeri*, 53  
   " *glabriuscula*, 53  
   " *Jenkinsii*, 53  
   " *lateriflora*, 52  
   " *macrophylla*, 53  
   " *nitida*, 53  
   " *simiarum*, 52  
   " *suberosa*, 53  
   " *Sumatrana*, 53  
*Polycarpaea*, 80  
   " *corymbosa*, 81  
   " *marginata*, 81  
*Polycarpon*, 80  
   " *Lœflingiae*, 81  
*Polygala*, 76  
   " *arillata*, 78  
   " *arvensis*, 77  
   " *cardiocarpa*, 78  
   " *Chinensis*, 77  
   " *crotalarioides*, 78  
   " *erioptera*, 78  
   " *furcata*, 78  
   " *glaucescens*, 78  
   " *glomerata*, 77  
   " *Karensium*, 78



- Polygala leptalea*, 78  
     *telephioides*, 77  
     *triphylla*, var. *glaucescens*, 78  
*Pomatorhinus leucogaster*, 160  
     *McClellandi*, 177  
     *ruficollis*, 160  
*Popowia Helferi*, 54  
*Portulaca*, 81  
     *oleracea*, 81  
     *quadrifida*, 82  
*Porzana bicolor*, 174  
     *fusca*, 175  
*Pratinicola caprata*, 166  
     *Indica*, 166  
     *leucura*, 166, 171  
*Prinia flaviventris*, 171  
     *gracilis*, 165  
     *Hodgsoni*, 165, 166  
     *rufescens*, 166  
     *rufula*, 165  
*Proparus vinipectus*, 169  
*Psilobium capillare*, 189  
*Psophia crepitans*, 254  
*Pterocarpus macrocarpus*, 187  
*Pterocymbium Javanicum*, 117  
*Pteropus medius*, 236  
*Pterospermum*, 114  
     *acerifolium*, 120  
     *aceroides*, 120  
     *Blumeanum*, 120  
     *cinnamomeus*, 120, 182  
     *fusum*, 120  
     *diversifolium*, 120  
     *lanceifolium*, 120  
     *semisagittatum*, 120  
*Ptychosperma simplicifrons*, 201  
*Pueraria brachycarpa*, 185  
*Pycnonotus pygæus*, 178  
*Pycnorhis Sinensis*, 160  
*Pyramidanthe macrantha*, 56  
*Pyrenaria*, 89  
     *attenuata*, 93  
     *camellieiflora*, 92  
     *diospyricarpa*, 92  
     *lanceolata*, 93  
     *serrata*, 93  
*Rallus striatus*, 175  
*Ranunculus*, 43  
     *diffusus*, 45  
     *Indicus*, 45  
     *sceleratus*, 48  
     *subpinnatus*, 45  
     *vestitus*, 45  
*Raphanus*, 66  
     *sativus*, 67  
*Reguloides chloronotus*, 247  
     var. 168  
     *erocroa*, 167  
     *fulvoventer*, 167  
     *maculipennis*, 247, 248  
*Reguloides proregulus*, 247  
     *trochiloides*, 247  
     *viridipennis*, 247  
*Reidleya velutina*, 121  
*Reinwardtia*, 134  
     *Indica*, 134  
     *trigyna*, 134  
*Rhinolophus affinis*, 236  
     *Garoensis*, 236  
     *larvatus*, 234  
     *luctus*, 234  
     *Yunnanensis*, 234  
*Rhopalopetalum uniflorum*, 55  
*Rhynchosia tomentosa*, 186  
*Rissoina evanida*, 25  
     *minuta*, 25  
     *nivea*, 26  
     *obeliscus*, 25  
     *percrassa*, 26  
*Roydsia*, 68  
     *obtusifolia*, 71  
     *parviflora*, 71  
*Rubia cordifolia*, 188  
     *Sikkimensis*, 188  
*Ruticilla aurea*, 166  
*Ryparia*, 74  
     *cæsia*, 76  
*Saccopetalum sclerocarpum*, 58  
*Sagguerus Rumphii*, 202  
*Salmalia Malabarica*, 113  
*Salomonina*, 76  
     *angulata*, 79  
     *aphylla*, 79  
     *Cantonensis*, 78  
     *cylindrica*, 79  
     *longiciliata*, 78  
     *obovata*, 79  
     *oblongifolia*, 79  
     *parasitica*, 79  
*Saponaria perfoliata*, 81  
     *vaccaria*, 81  
*Saraglossa spiloptera*, 170  
*Saurauja*, 89  
     *armata*, 92  
     *cerea*, 92  
     *macrotricha*, 92  
     *Punduana*, 92  
     *Roxburghii*, 92  
*Scaphium Wallichii*, 117  
*Schima*, 89  
     *Bancana*, 94  
     *crenata*, 94  
     *monticola*, 93, 181  
     *Noronhæ*, 93  
     *oblata*, 94  
     *Wallichii*, 93  
*Schmiedelia chartacea*, 183  
*Schoutenia*, 123  
*Scolopax rusticola*, 253  
*Scolopia*, 74





- Scelopora roxburghii*, 74  
 \**Scutellaria* ? *abnormis*, 28  
*Seaforthia kuhlii*, 200  
*Securidaca*, 77  
     " *inappendiculata*, 79  
     " *paniculata*, 79  
     " *Tavoyana*, 79  
     " *scandens*, 79  
*Semeiocardium glaucescens*, 78  
*Semplotus McClellandi*, 31  
*Sethia indica*, 135  
*Sethia* ? *kunthiana*, 135  
*Shorea*, 95  
     " *floribunda*, 100  
     " *gratissima*, 100  
     " *Helferi*, 100  
     " *leprosula*, 100  
     " *obtusata*, 99  
     " *Penangiana*, 96  
     " *robusta*, 100  
     " *Siamensis*, 100  
     " *stellata*, 99  
*Sibia gracilis*, 164, 179  
     " *pulchella*, 164  
 \**Sicydium fasciatum*, 31  
*Sida*, 101  
     " *acuta*, 103  
     " *alnifolia*, 103  
     " *Asiatica*, 104  
     " *cordifolia*, 103  
     " *carpinifolia*, 103  
     " *Chinensis*, 103  
     " *corylifolia*, 103  
     " *decagyna*, 103  
     " *glutinosa*, 104  
     " *graveolens*, 104  
     " *humilis*, 104  
     " *Indica*, 104  
     " *microphylla*, 103  
     " *lanceolata*, 103  
     " *Mysurensis*, 104  
     " *Phillippica*, 103  
     " *polyandra*, 104  
     " *populifolia*, 104  
     " *retusa*, 103  
     " *rhombifolia*, 103  
         " *var. acuta*, 103  
         " *var. alnifolia*, 103  
         " *var. canariensis*, 102  
         " *var. Linneana*, 103  
         " *var. retusa*, 103  
     " *rhomboides*, 103  
*Sinapis cuneifolia*, 67  
     " *dichotoma*, 67  
     " *divaricata*, 66  
     " *juncea*, 67  
     " *patens*, 67  
     " *pusilla*, 66  
     " *ramosa*, 67  
     " *rugosa*, 67  
*Siphia erythraea*, 158  
*Sitta Nagaensis*, 157  
*Spizixos canifrons*, 179  
*Spizalanda Deva*, 252  
     " *simillima*, 252  
*Stephania*, 59  
     " *hernandifolia*, 61  
     " *var. discolor*, 61  
     " *var. glabrescens*, 61  
     " *rotunda*, 61  
*Sterculia*, 114  
     " *alata*, 117  
     " *angustifolia*, 116  
         " *var. angustifolia*, 116  
         " *var. mollis*, 116  
     " *campanulata*, 117  
     " *coccinea*, 116  
     " *colorata*, 117  
         " *var. fulgens*, 117  
     " *ensifolia*, 117  
     " *fetida*, 115  
     " *fulgens*, 117  
     " *guttata*, 117  
     " *Heynii*, 117  
     " *longifolia*, 116  
     " *linguifolia*, 117  
     " *mollis*, 116  
     " *ornata*, 116  
     " *pallens*, 117  
     " *parviflora*, 116  
     " *ornata*, 116  
     " *rubiginosa*, 116  
     " *scaphigera*, 117  
     " *striatiflora*, 116  
     " *urens*, 116  
     " *versicolor*, 116  
     " *villosa*, 116  
*Suya atrogularis*, 167  
     " *fuliginosa*, 16  
*Synaptea grandiflora*, 96  
     " *odorata*, 96  
*Sylviparus modestus*, 169  
*Talinum*, 81  
     " *cuneifolium*, 82  
*Tamarix dioica*, 82  
     " *gallica*, 82  
     " *Indica*, 82  
*Taphozous melanopogon*, 236  
     " *saccolaimus*, 236  
*Taractogenos Blumei*, 76  
*Tchitrea affinis*, 157  
*Telauma*, 47  
     " *Candollei*, 47  
     " *hiliifera*, 47  
     " *mutabilis*, 47  
*Ternstroemia*, 89  
     " *bilocularis*, 92  
     " *coriacea*, 90  
     " *Japonica*, 90  
     " *macrocarpa*, 90



- Ternstroemia Penangiana*, 90  
     " *serrata*, 92  
*Tetracera sarmentosa*, 45  
     " 45  
     " *assa*, 45  
     " *trigyna*, 45  
*Thalictrum bracteatum*, 43  
*Thea Bohea*, 94  
     " *Chinensis*, 94  
     " *Cochinchinensis*, 94  
     " *viridis*, 94  
*Thespesia*, 102  
     " *lumpas*, 112  
     " *macrophylla*, 112  
     " *populnea*, 111  
*Tiliacora*, 59  
     " *acuminata*, 62  
     " *racemosa*, 62  
*Tinamus robustus*, 254  
     " *variegatus*, 254  
*Tinospora*, 59  
     " *cordifolia*, 60  
     " *crispa*, 60  
     " *Malabarica*, 60  
     " *nudiflora*, 60  
     " *tomentosa*, 60  
*Tinnunculus cenchris*, 239  
     " *Pekinensis*, 239  
*Totanus stagnatilis*, 174  
*Treron Nipalensis*, 171  
*Tribulus*, 138  
     " *cistoides*, 138  
     " *lanuginosus*, 138  
     " *terrestris*, 138  
*Tribura luteoventris*, 246  
*Trichastoma Abbotti*, 162  
*Tridesmis formosa*, 84  
     " *pruniflora*, 84  
*Triopteris Indica*, 137  
*Triton labiosus*, 29  
     " *gemmatus*, 29  
     " *gibbosus*, 29  
     " (*Gutturnium*) *orientalis*, 29  
*Triumfetta*, 123  
     " *angulata*, 128  
     " *annua*, 129  
     " *Bartramia*, 128  
     " *cana*, 128, 129  
     " *oblonga*, 129  
     " *octandra*, 129  
     " *pilosa*, 129  
     " " *var. oblonga*, 129  
     " *rhomboidea*, 128  
     " *rotundifolia*, 129  
     " *semitriloba*, 129  
     " *tomentosa*, 129  
*Trivalvaria macrophylla*, 53  
*Trochaloipteron Austeni*, 180  
     " *cineraceum*, 162  
     " *lineatum*, 163  
     " *setafer*, 163  
*Trochaloipteron variegatum*, 162  
     " *virgatum*, 162  
*Trochus* (*Monilea*) *callifera*, 27, 28  
     " (*Solariella*) *castus*, 27  
     " (*Clanculus*) *Ceylonicus*, 27  
     " " *depictus*, 27  
     " " *Kraussii*, 27  
     " " *Tonnerrei*, 27  
     " (*Monilea*) *Masoni*, 28  
     " " *rigata*, 27  
     " " *scabrosus*, 27  
     " " *Warnefordi*, 27  
*Turdinus Abbottii*, 160  
     " *brevicaudatus*, 160  
     " *Garcoensis*, 160  
*Turdulus pallens*, 178  
*Turnix Dussumierii*, 174  
     " *ocellatus*, 174  
     " *Sykesii*, 174  
*Turtur humilis*, 172  
  
*Unona*, 48  
     " *coelophloca*, 52  
     " *dasytaschala*, 52  
     " " *var. Bhumai*, 52  
     " " *var. Wallichii*, 52  
     " *desmos*, 51  
     " *discolor*, 51  
     " *Dunalii*, 51  
     " *latifolia*, 52  
     " *longiflora*, 52, 56  
     " *macrantha*, 56  
     " *stenopetala*, 52  
*Urena*, 101  
     " *lobata*, 105  
     " " *var. lanosa*, 105  
     " " *var. sinuata*, 105  
     " *microcarpa*, 105  
     " *reticulata*, 105  
     " *ribesia*, 105  
     " *rigida*, 105  
     " *scrabriuscula*, 105  
     " *sinuata*, 105  
     " *speciosa*, 105  
     " *Swartzii*, 105  
     " *viminea*, 105  
*Urocissa magnirostris*, 170  
*Urostigma ? cuneatum*, 135  
*Uvaria*, 48  
     " *axillaris*, 51  
     " *bracteata*, 50  
     " *cerasoides*, 53  
     " *dioica*, 58  
     " *dulcis*, 50  
     " *ferruginea*, 49  
     " *fornicata*, 56  
     " *grandiflora*, 50  
     " *hirsuta*, 50  
     " *lutea*, 50  
     " *macrophylla*, 50  
     " *micrantha*, 50



- Uvaria* odorata, 51  
 " odoratissima, 55  
 " purpurea, 50  
 " pilosa, 50  
 " ptychocalyx, 50  
 " reticulata, 97  
 " suberosa, 53  
 " Sumatrana, 50  
 " trichomalla, 50  
 " uncata, 55  
 " ventricosa, 50  
 " villosa, 58  
  
*Vareca heteroclitia*, 73  
*Vateria lanceaefolia*, 101  
*Vatica*, 95  
 " faginea, 96  
 " grandiflora, 96  
 " lanceaefolia, 101  
 " scaphula, 100  
 " trigyna, 101  
*Venilia pyrrhotis*, 155  
*Vespertilio formosus*, 236  
 " montivagus, 237  
 " plicatus, 143  
*Vesperugo annectans*, 236  
 " (*Pipistrellus*) *Austenianus*, 236  
 " *imbricatus*, 235  
 " *vesperus* *pachyotis*, 235  
 " (*Tylonycteris*) *pachypus*, 236  
 \* *Vigna brachycarpa*, 185  
 " *Gangeticus*, 185  
*Viola*, 72  
 " diffusa, 72  
 " *Patrinii*, 72  
 " *primulifolia*, 72  
 " *serpens*, 72  
  
*Viola suffruticosa*, 73  
 " *Walkerii*, 72  
*Visenia*, 114  
 " *Indica*, 121  
 " *umbellata*, 121  
  
*Wallichia*, 195  
 " *caryotoides*, 195, 203  
 " *densiflora*, 195, 203  
 " *disticha*, 195, 203  
 " *oblongifolia*, 203  
*Waltheria*, 114  
 " *Americana*, 121  
 " *Indica*, 121  
*Wrightia caryotoides*, 203  
  
*Xanthochymus dulcis*, 88  
 " *pictorius*, 88  
*Xanthophyllum*, 77  
 " *affine*, 80  
 " *angustifolium*, 80  
 " *eglandulosum*, 80  
 " *flavescens*, 79, 80  
 " *glaucum*, 80  
 " *insignis*, 80  
 " *paniculatum*, 79  
 " *virens*, 79, 80  
  
*Xylopia*, 48  
*Xylosma*, 74  
  
*Yuhina nigrimentum*, 169  
  
*Zallacca*, 197  
 " *edulis*, 207  
 " *Rumphii*, 207  
 " *Wallichiana*, 197, 207





## ADDITIONS AND ERRATA.

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Page 46, 17 lines from top of page, after words "*D. elongata*, Miq.," add words "Fl. Ind. Bat. I /2. 12;" and 21 lines from above, for "t. 9293," read "t. 92—93."

Page 57, 8 lines from top of page, after words "slopes of," add word "the;" and after "Pegu" add "Yomah."

Page 61, 4 lines from top of page, transfer the passage "2. *C. LINNÆANUS*, (*Menispermum hirsutum* L. sp. pl. 1469 Roxb. Fl. Ind. III. 814; *Menispermum myosotoides*, L. l. c.; *Cocculus villosus*, DC. Syst. I. 525; Hf. and Th. Ind. Fl. I. 101).

HAB. Frequent in hedges, shrubberies, etc., around villages all over Pegu and Promo; also Ava. Fl. Jan. Febr.

3. *C. INCANUS*, Colebr. in Linn. Trans. XVII. 57; Scheff. Obs. Phyt. III. 76, t. 10. (*Pericampylus incanus*, Miers in Tayl. Ann. ser. 2. VII. 40 and Contr. Bot. III. 118; Hf. and Th. Ind. Fl. I. 102; *Menispermum villosum* Roxb. Fl. Ind. III. 812).

HAB. Frequent in savannahs, mixed and other deciduous forests all over Burmah from Chittagong, Ava, Pegu, and Martaban down to Tenasserim, up to 3000 ft. elevation. Fl. March," to the bottom of the following page.

Page 63, 3 lines from the bottom of the page, for "edition," read "issue;" and 5 lines from the bottom, after "t. 940," add "Jenk. Pl. Ind. 20. t. 19."

Page 67, 18 lines from top of the page, for "Roxb.," read "Rehb."

Page 74, 17 lines from top of page, erase the marks X X and substitute \* \*.

Page 76, 6 lines from bottom of page, after word "Seeds," add word "usually."

Page 85, 6 lines from top of page, after "257," add "(*C. biflorus*, Turcz. in Bull. Mox. 1863. 580)."

Page 103, 15 lines from top of page, for "*S. glutinosa*," read "*S. Mysurensis*."

Page 104, 4 lines from top of page, restore "*S. Mysurensis*, W. A.," and reduce "*S. GLUTINOSA*, Roxb. (non Cav.)" to a synonym; and 11 lines from top of page, for "*ALBUTILON*," read "*ABUTILON*."

Page 105, 3 lines from top of page, for "Capsules," read "Carpels."

Page 121, 8 lines from bottom of page, after "374," add "*W. longiramea*, Turcz. in Bull. Mosc. 1863, 571."

Page 125, 4 lines from top of page, for "\*, " read "X;" and 20 lines from the top, for "*G. scabrida*," read "*G. acuminata*."

Page 126, 16 lines from top of page, substitute "*G. ACUMINATA*, Tuss. in Ann. Mus. IV. 91. t. 48," and reduce "*G. SCABRIDA*, Wall" to a synonym; and 5 lines from the bottom, for "IV," read "1111."

Page 187, 17 lines from top of page, after "1/2," add "poll."

Page 206, 10 lines from top of page, add the words "Mr. Homfray of Port Blair has since informed me that this palm makes a trunk 8-12 ft. high, and that the leaves are there proportionally smaller. It is found also in the vicinity of Port Mouat."

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—◆—  
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(Nos. I to IV.—1874.)

EDITED BY  
THE HONORARY SECRETARY.

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"It will flourish, if naturalists, chemists, antiquaries, philologists, and men of science in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish, if such communications shall be long intermitted; and it will die away, if they shall entirely cease."

SIR WM. JONES.

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CALCUTTA :

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1874.



## LIST OF CONTRIBUTORS.



	<i>Page</i>
BROOKS, W. E.;—Some Ornithological Notes and Corrections,....	239
DAY, F.;—Remarks on some Indian Fishes,.....	31
DOBSON, G. E.;—On the Asiatic species of <i>Molossi</i> , .....	142
—————;—List of Chiroptera inhabiting the Khasia Hills, with description of a new Species, .....	234
—————;—Descriptions of new Species of Chiroptera from India and Yunan, .....	237
GODWIN-AUSTEN, H. H.;—Descriptions of nine Species of <i>Alycæinæ</i> from Assam and the Naga Hills (Plate III), .....	145
—————;—Fourth list of Birds principally from the Naga Hills and Manipur, including others from the Khasi, Garo, and Tipperah Hills (Pls. IV—X), .....	151
KURZ, S.;—Contributions towards a knowledge of the Burmese Flora,.....	39
—————;—Descriptions of a few Indian Plants, .....	181
—————;—Enumeration of Burmese Palms, (Pls. XII—XXXI),	191
MEDLICOTT, H. B.;—Record of the Khairpur Meteorite of 23rd Sept. 1873, .....	33
NEVILL, G. AND H.;—Descriptions of New Marine Mollusca from the Indian Ocean (Pl. I),.....	21
SCHWENDLER, L.;—On the General Theory of Duplex Telegraphy (Part I), .....	1
—————;——————(Part II), .....	218
WOOD-MASON, J.;—On the occurrence of a Superorbital Chain of Bones in the <i>Arboricolæ</i> (Wood-partridges) (Pl. II), .....	254

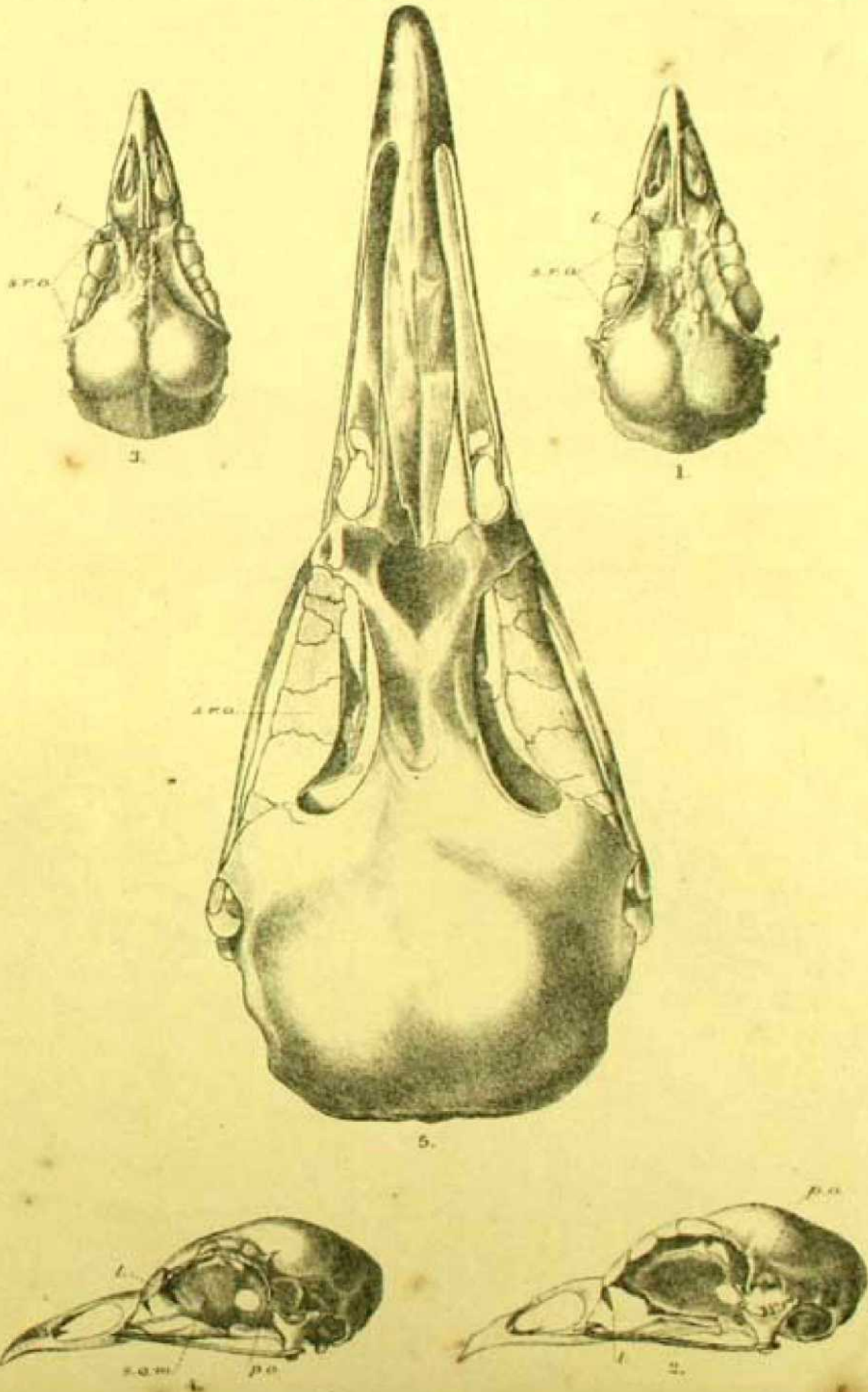




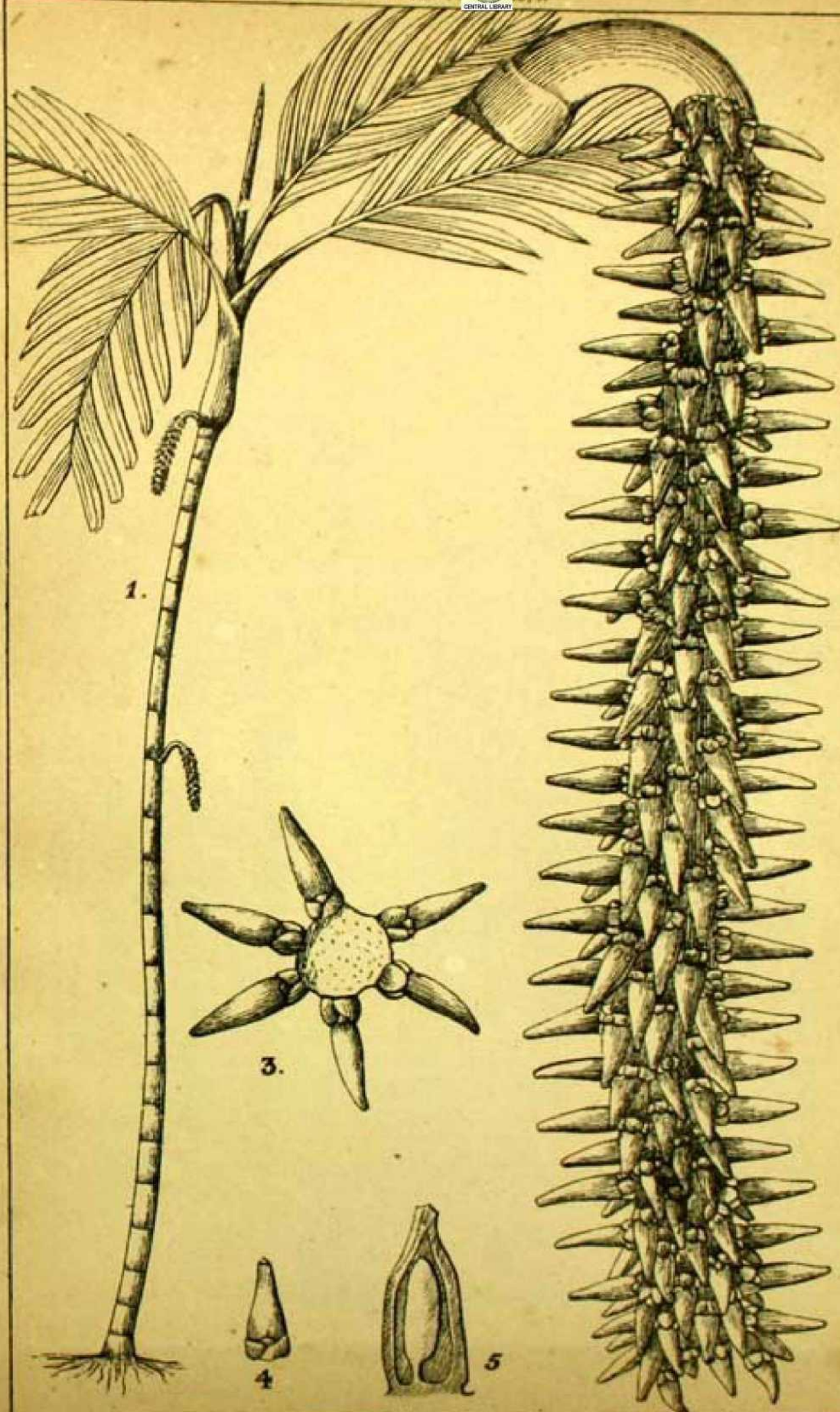
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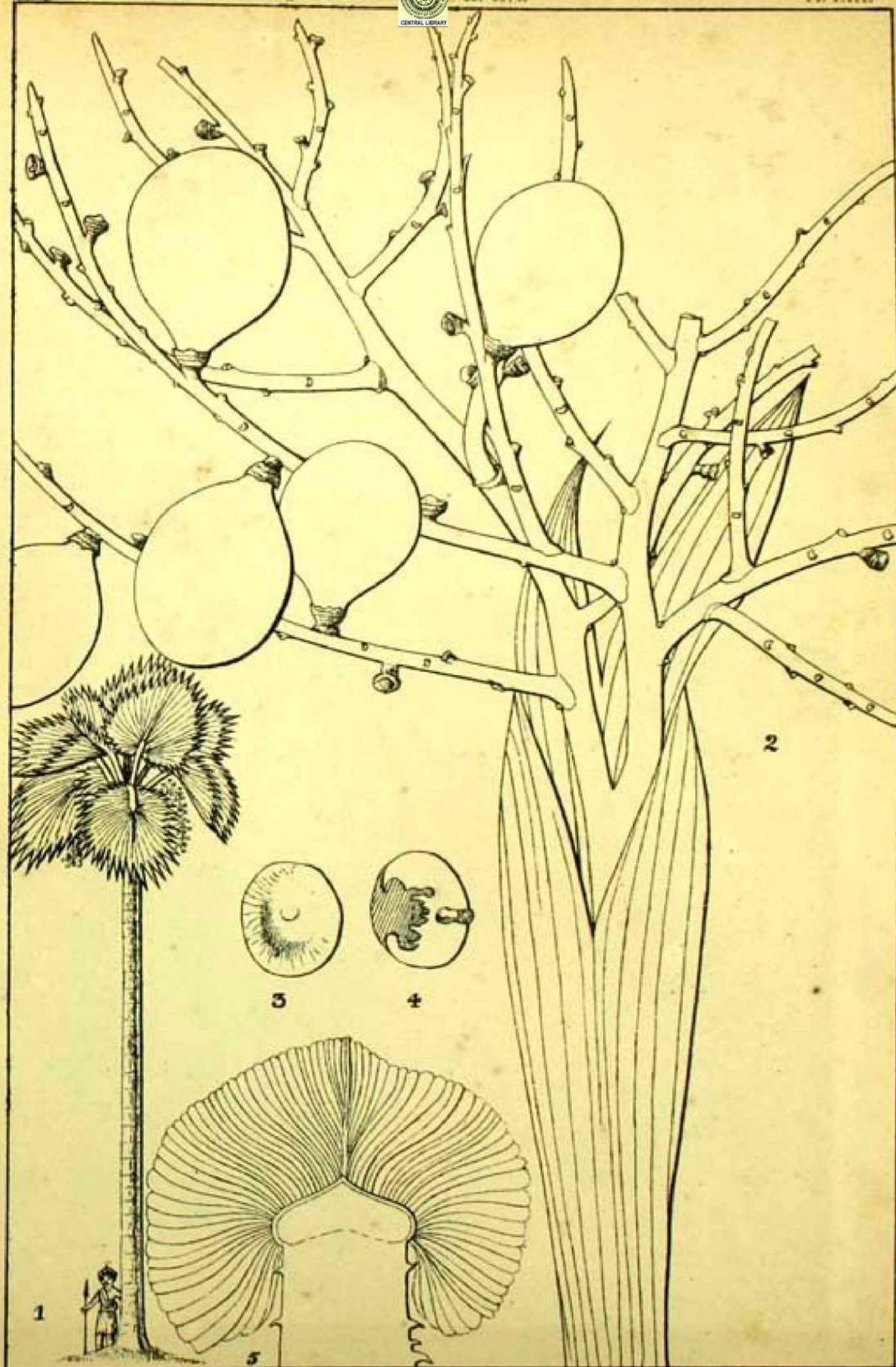




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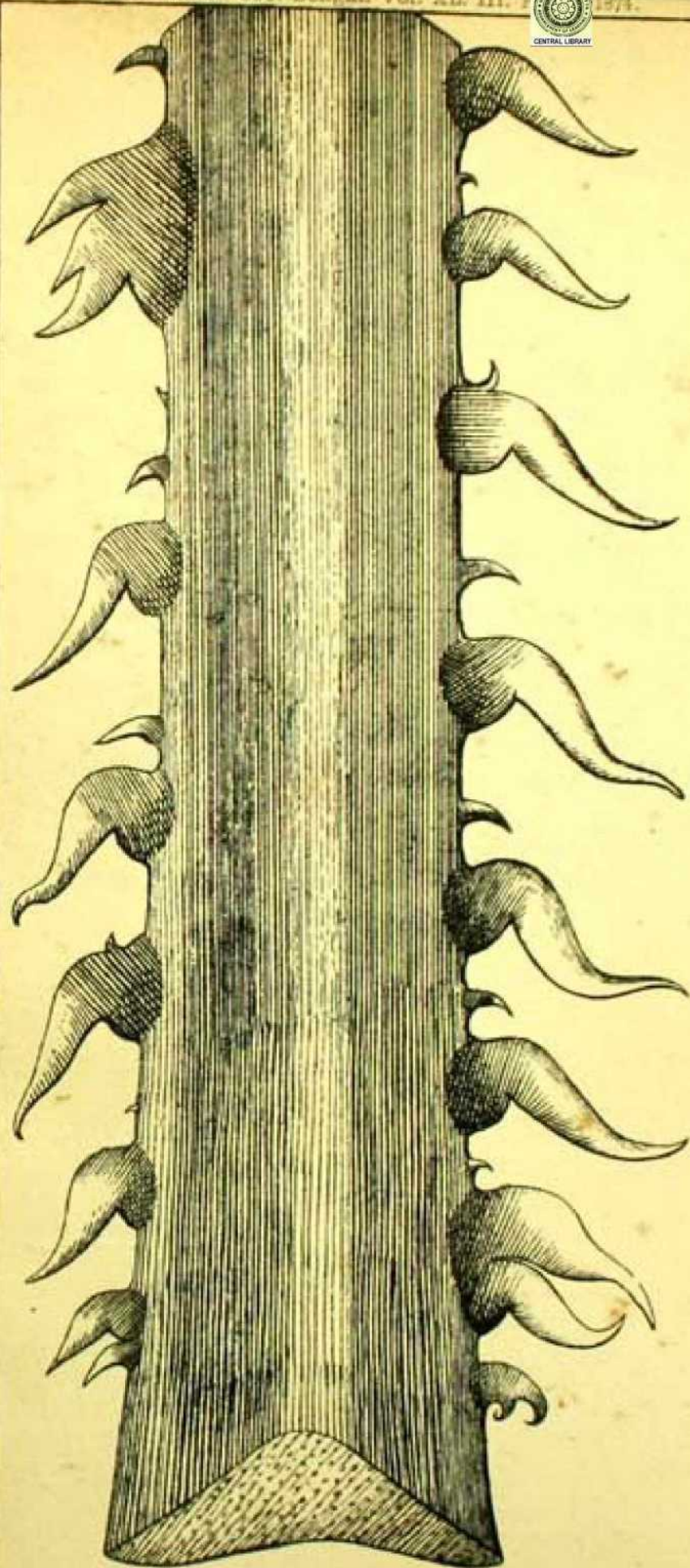




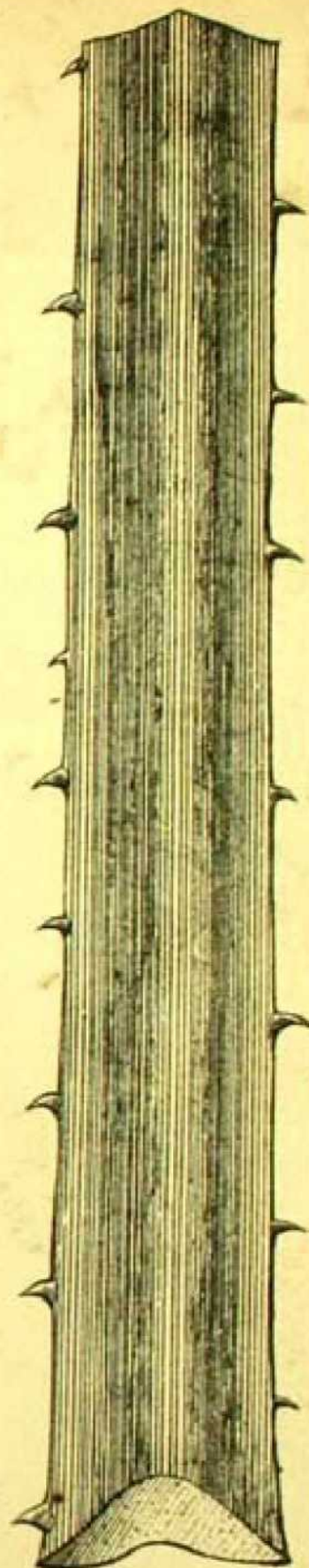
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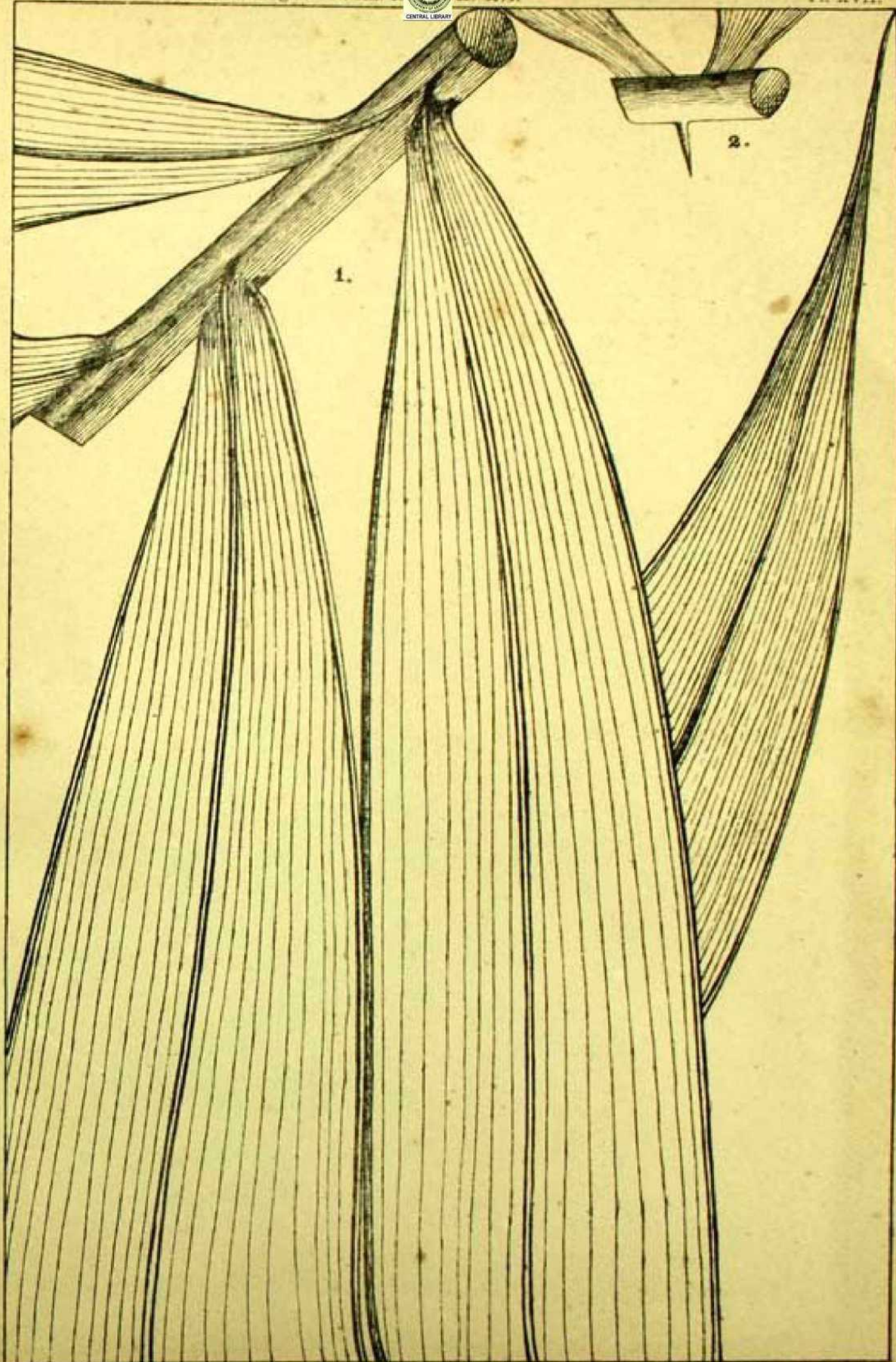
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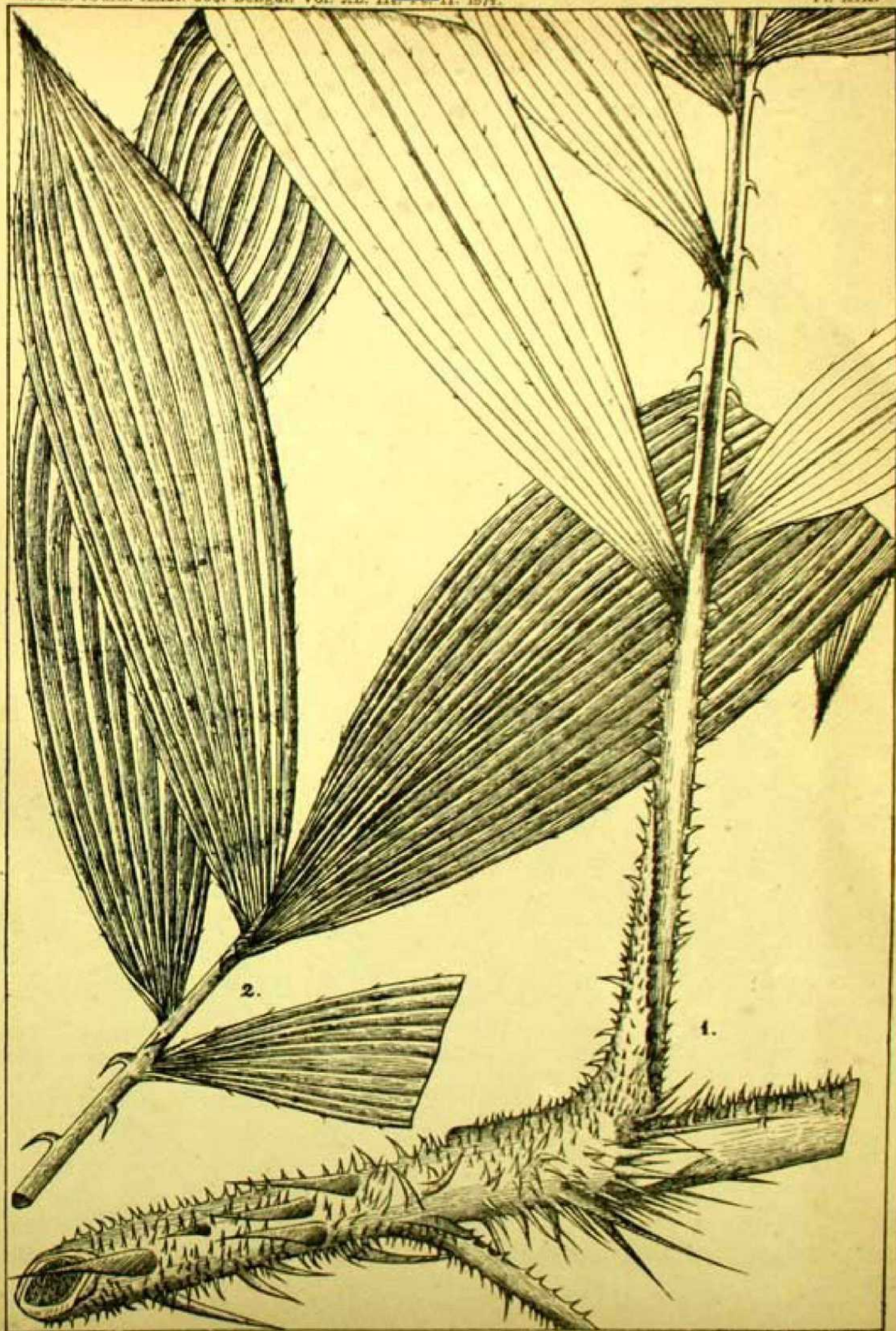




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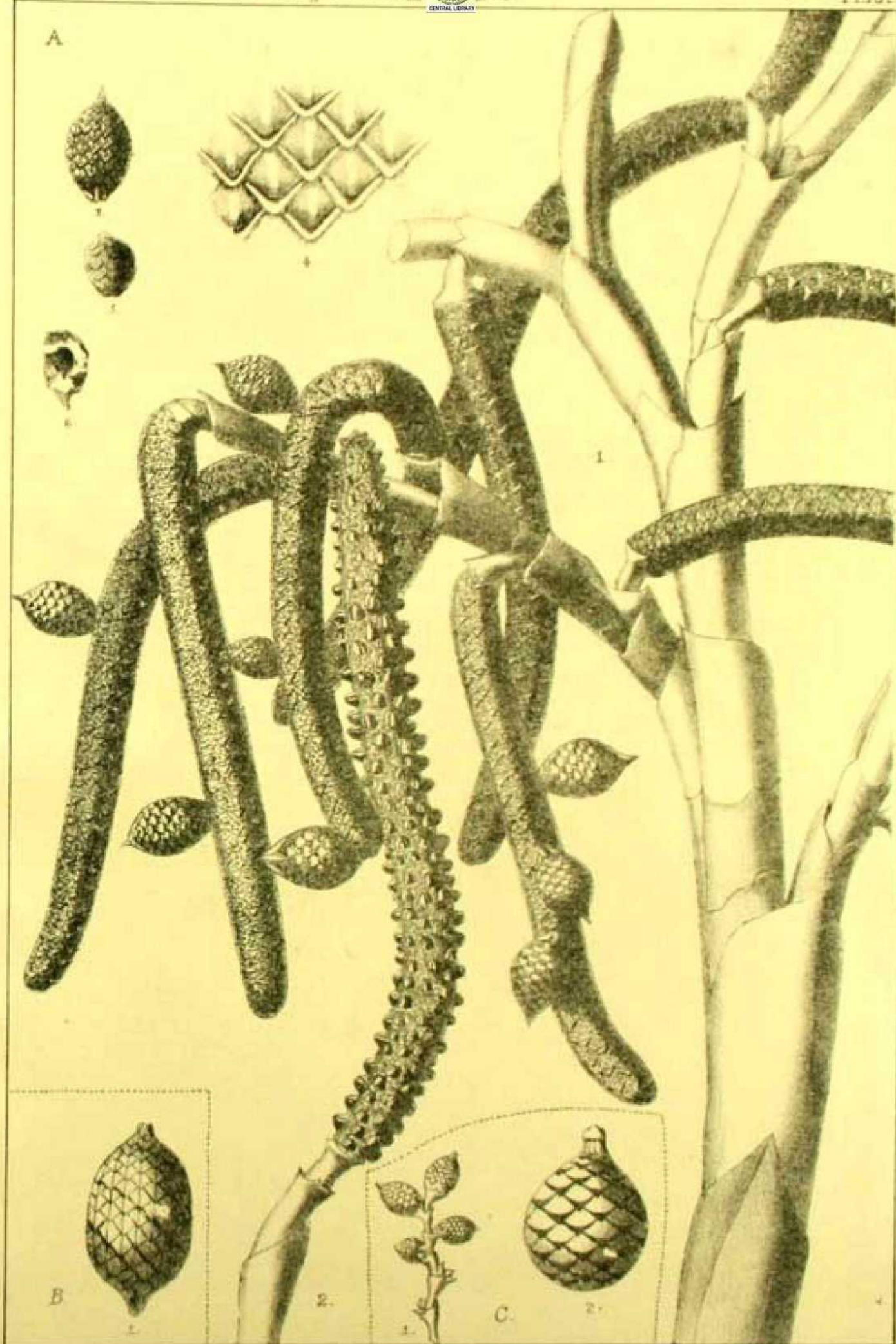




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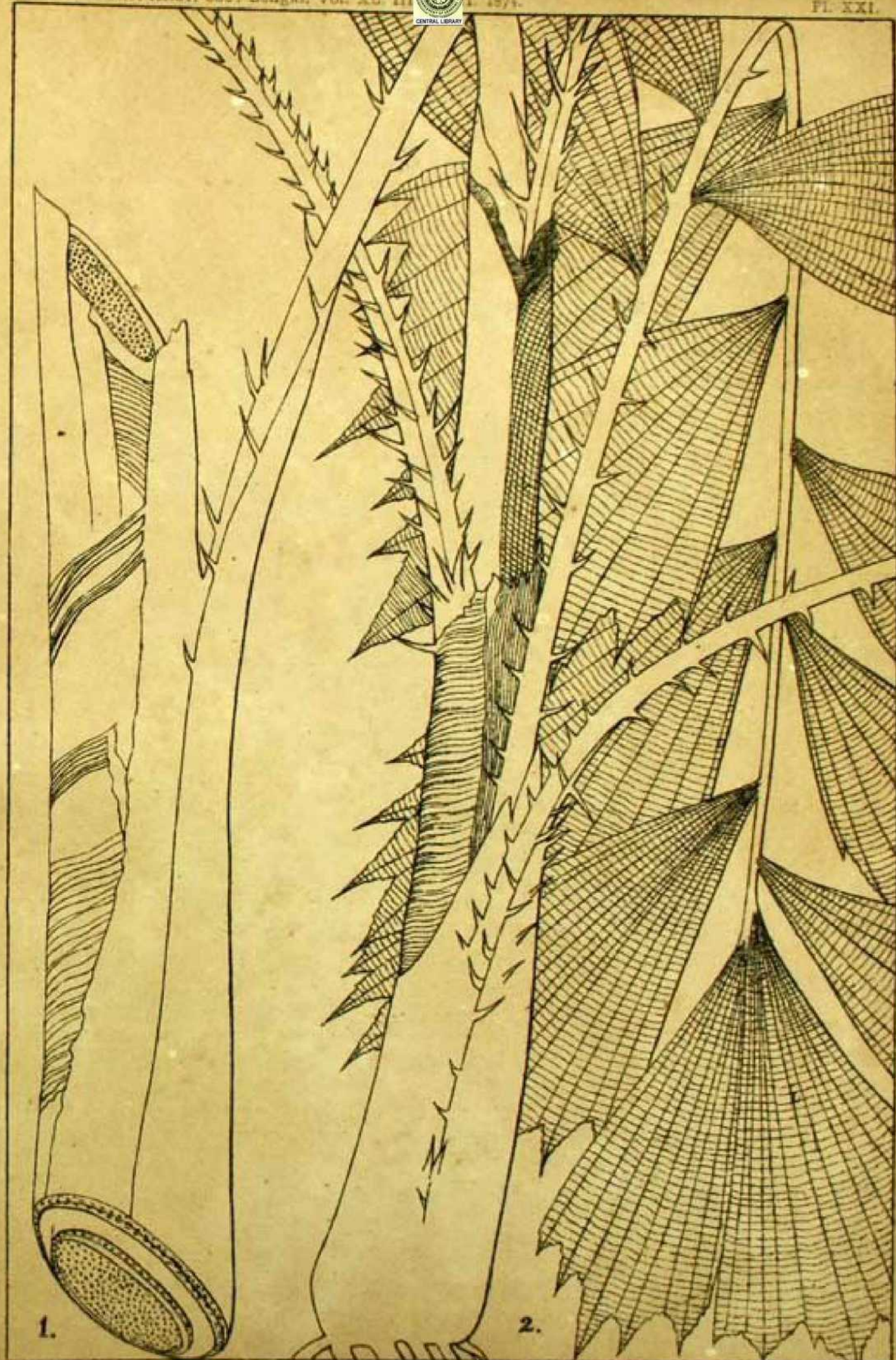


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A. *Korthalsia scaphigera* B. *calamus melanacanthus* C. *C. concinnus*.





KORTHALSIA SCAPHIGERA.





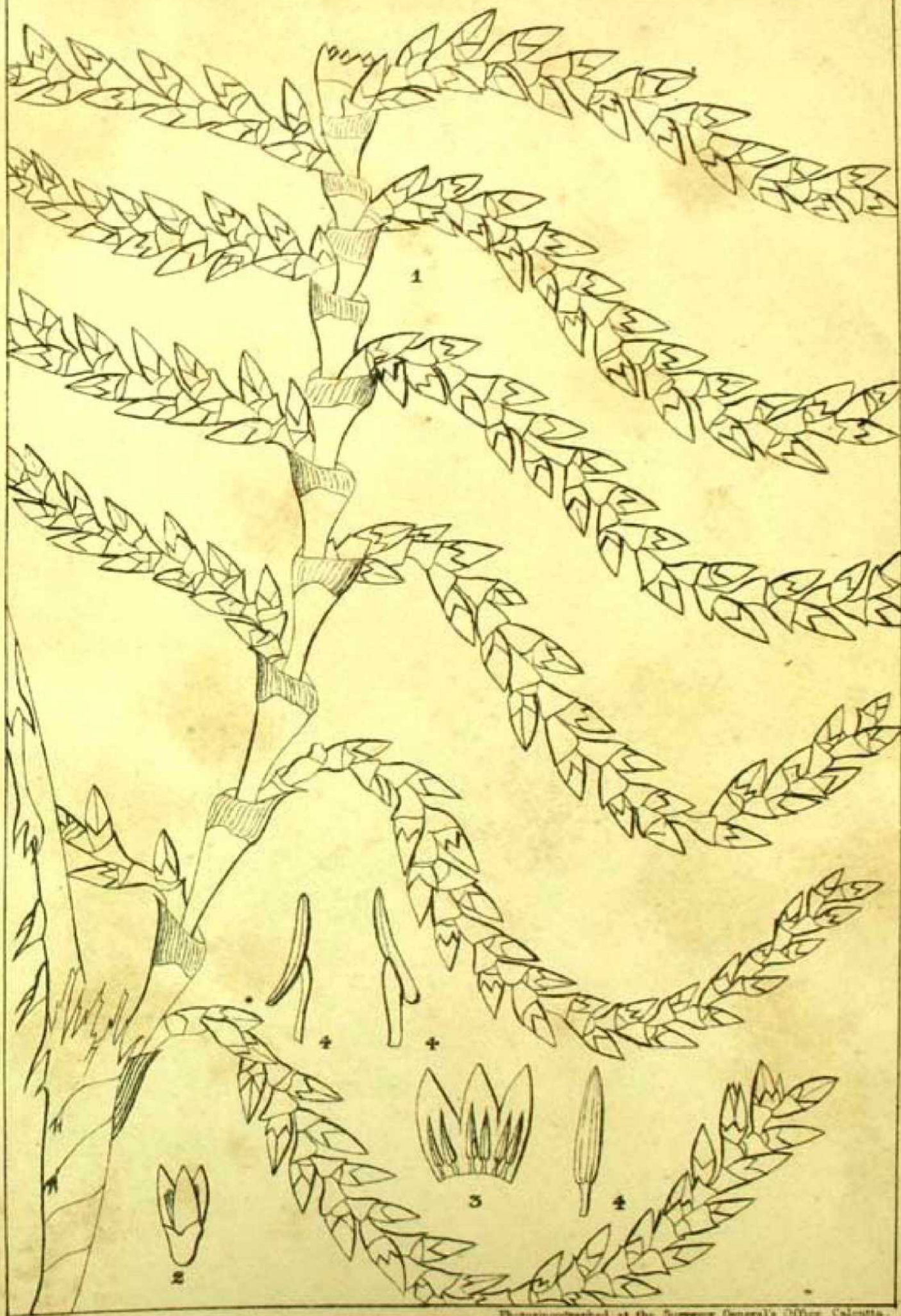
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CALAMUS ARBORESCENS.





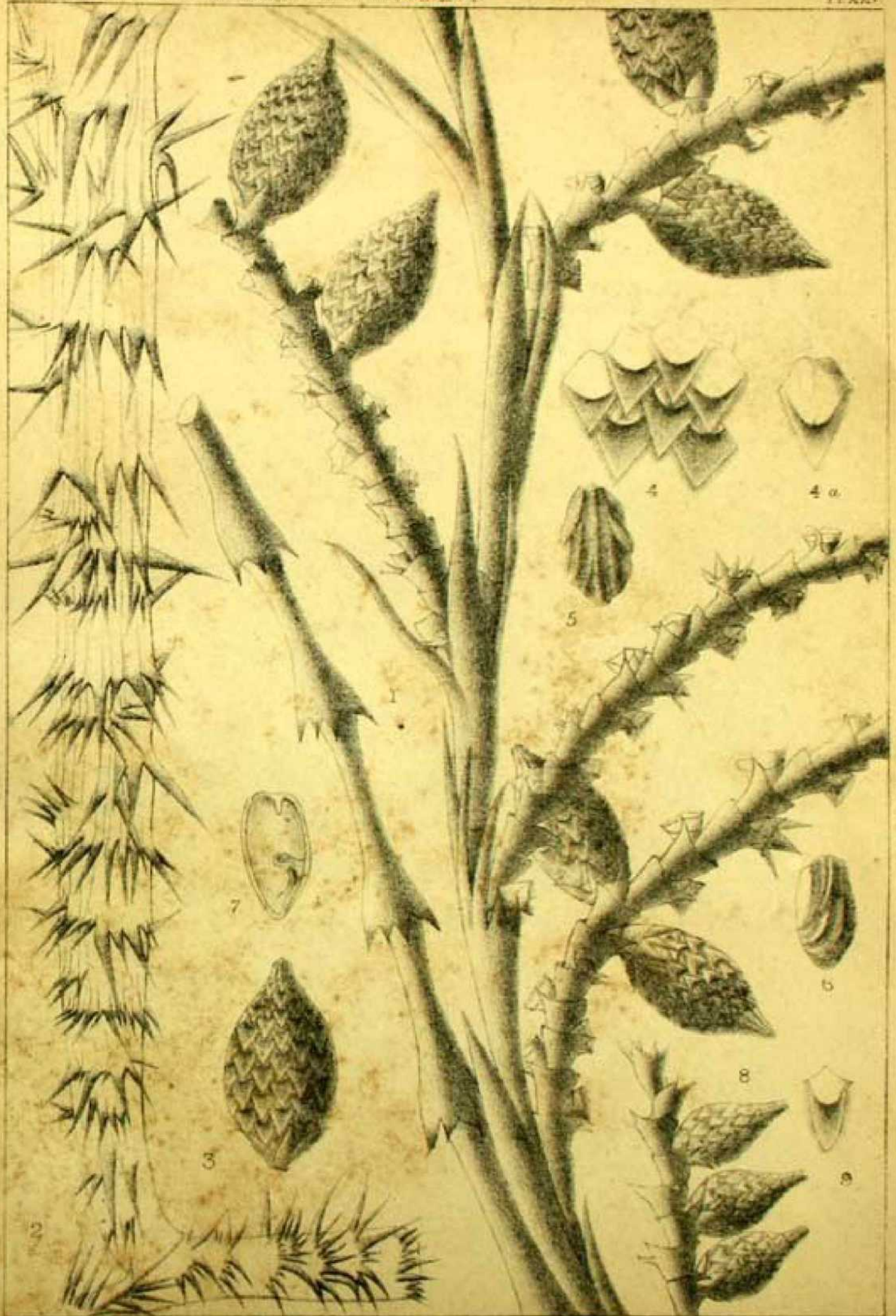




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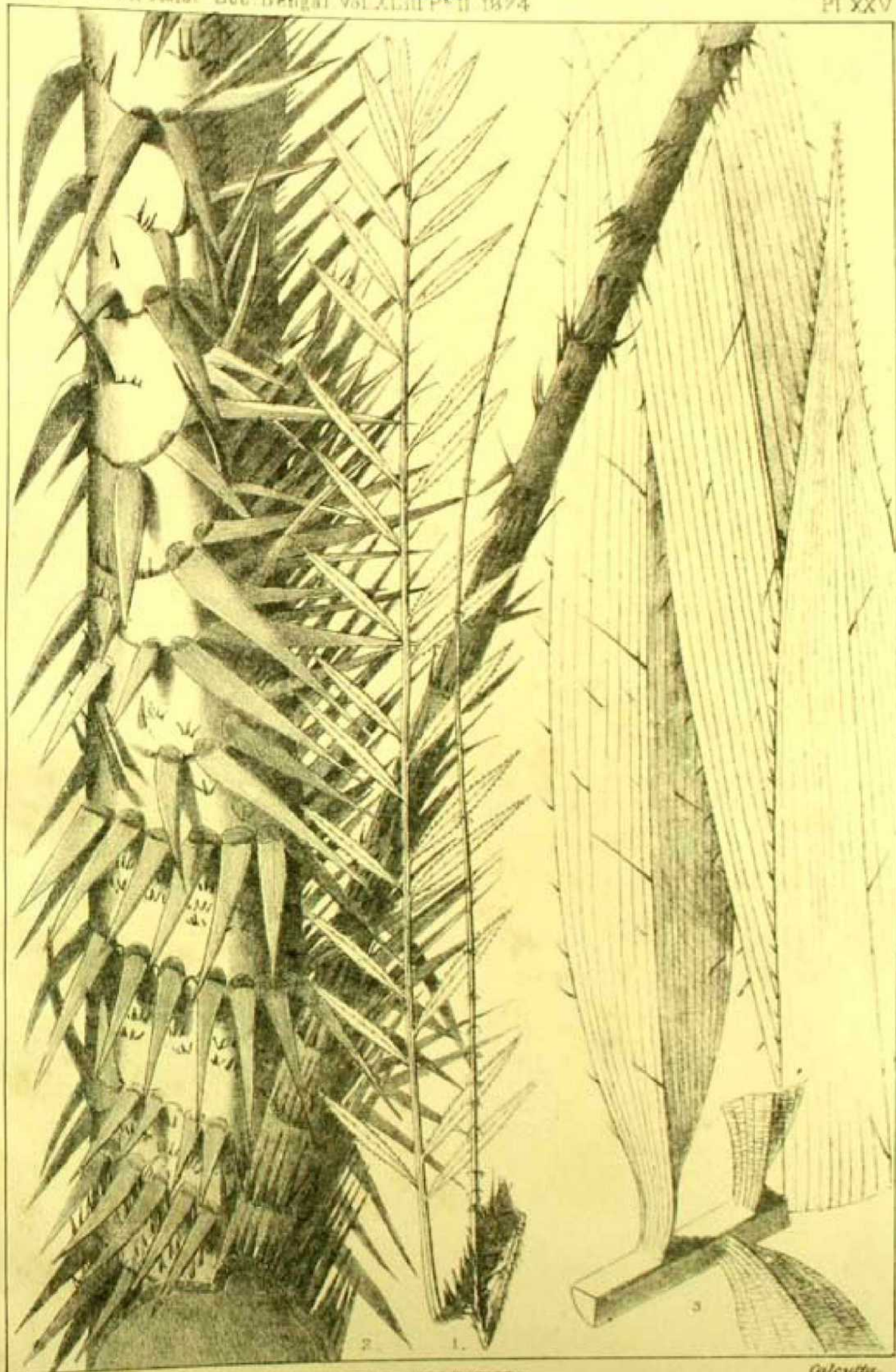
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CALAMUS TIGRINUS



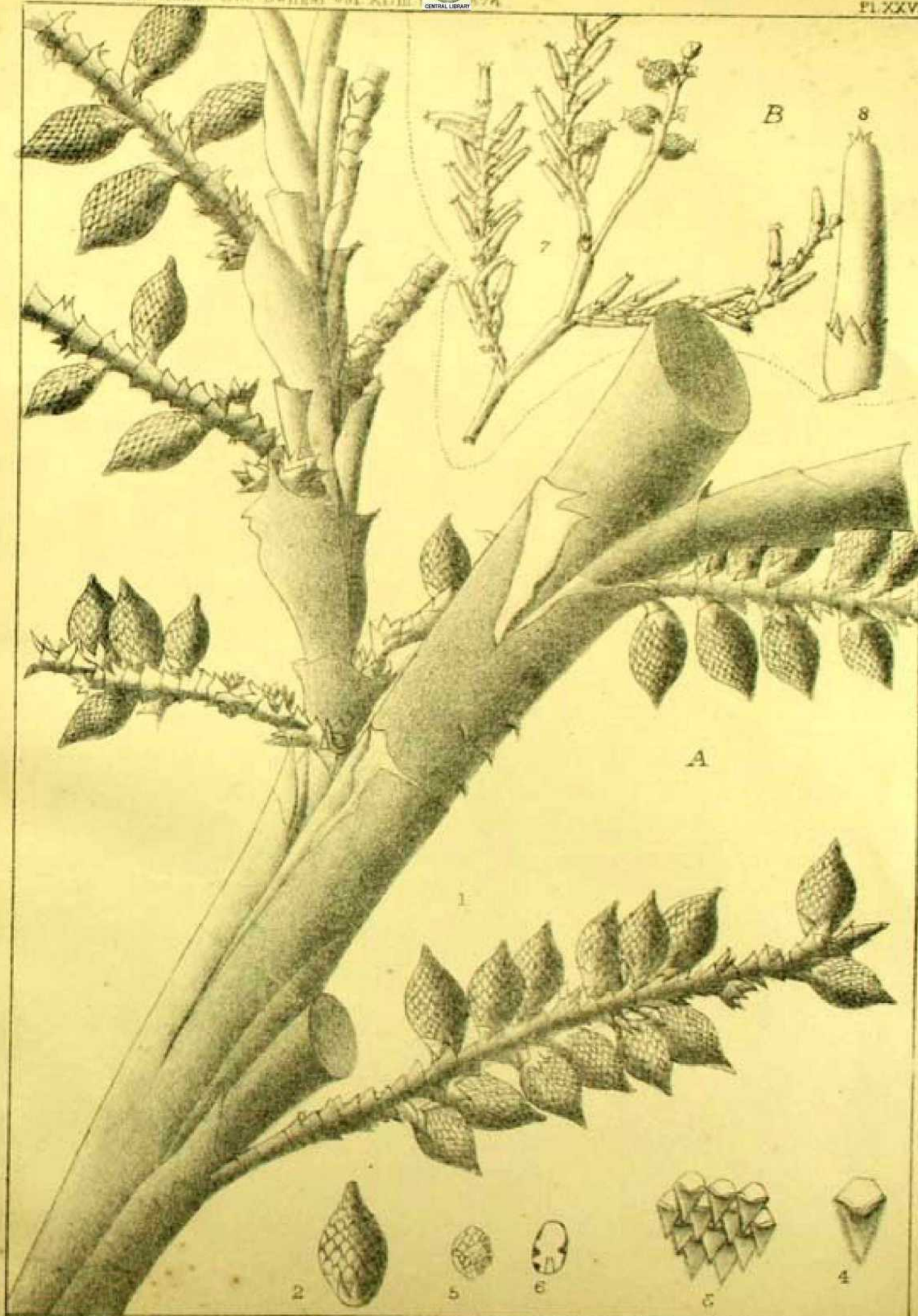


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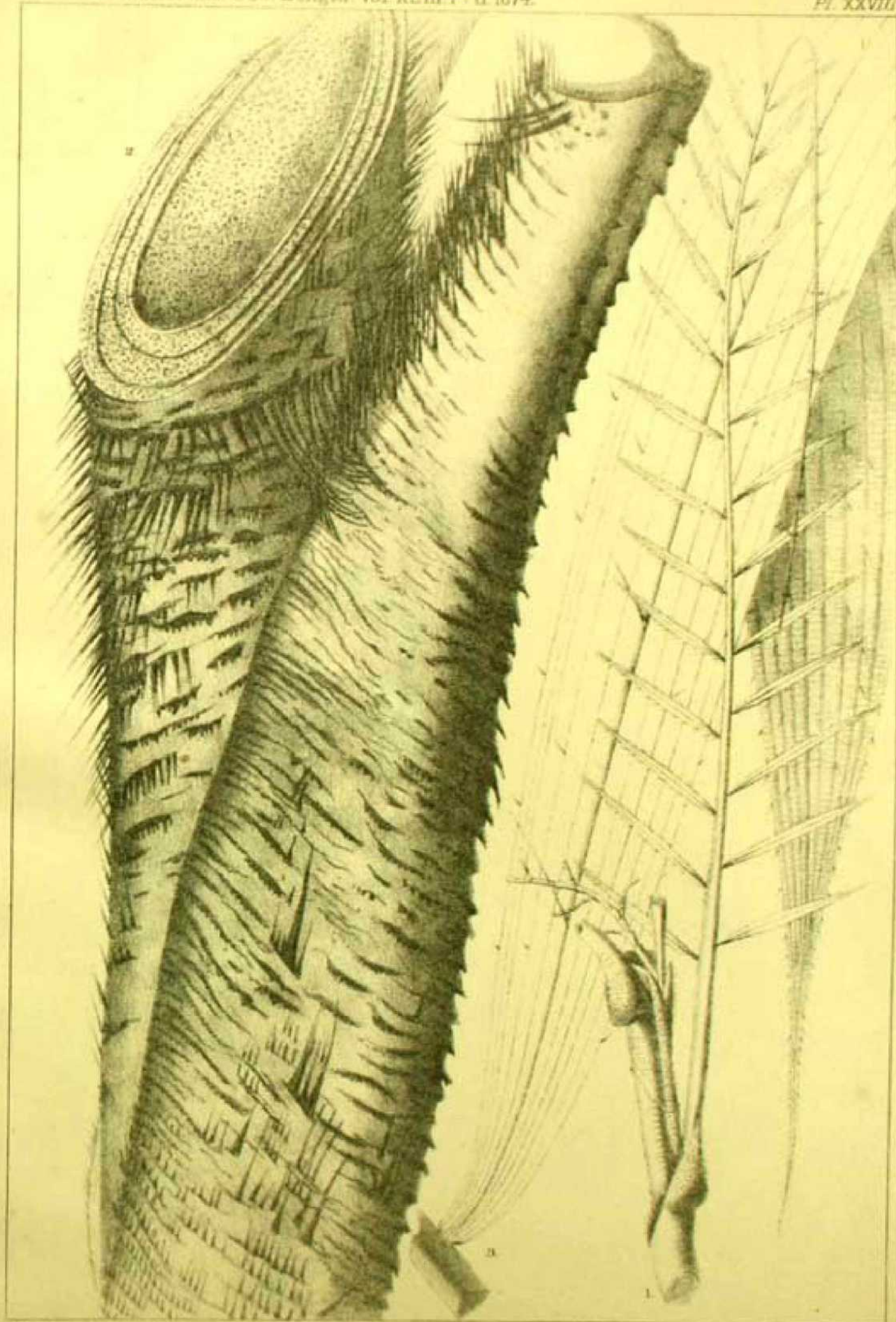
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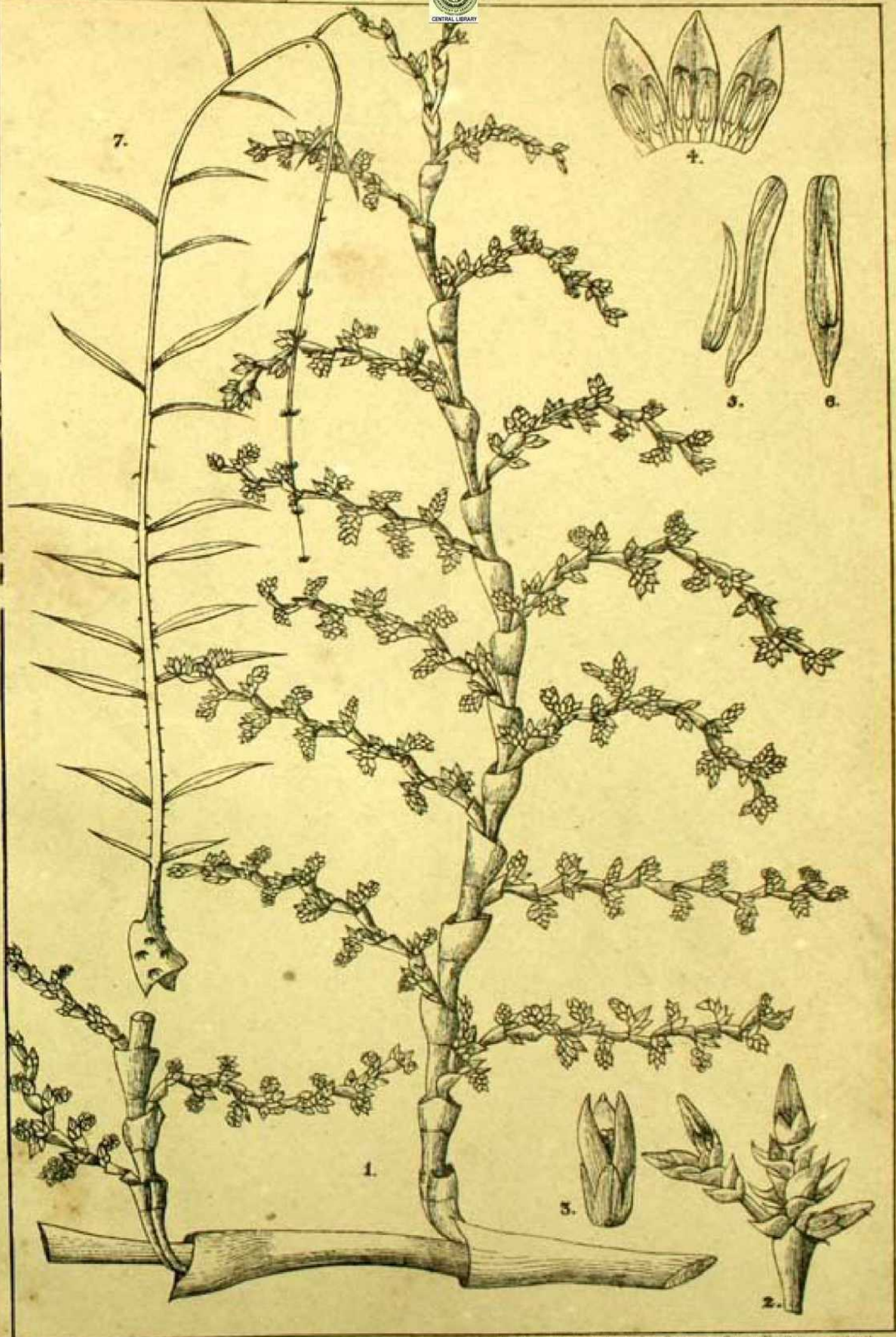




J. Schumacher del.

GALAMUS ANDAMANICUS, ♀.





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CALAMUS PARADOXUS.



